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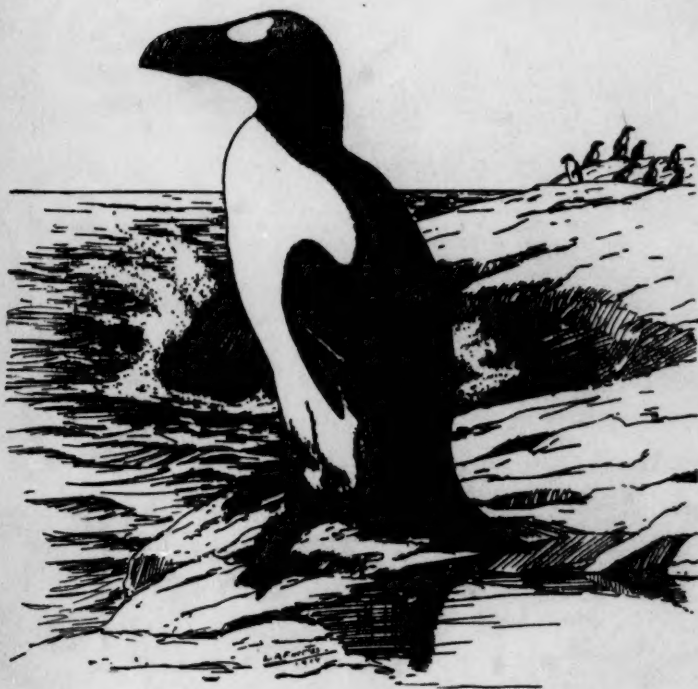
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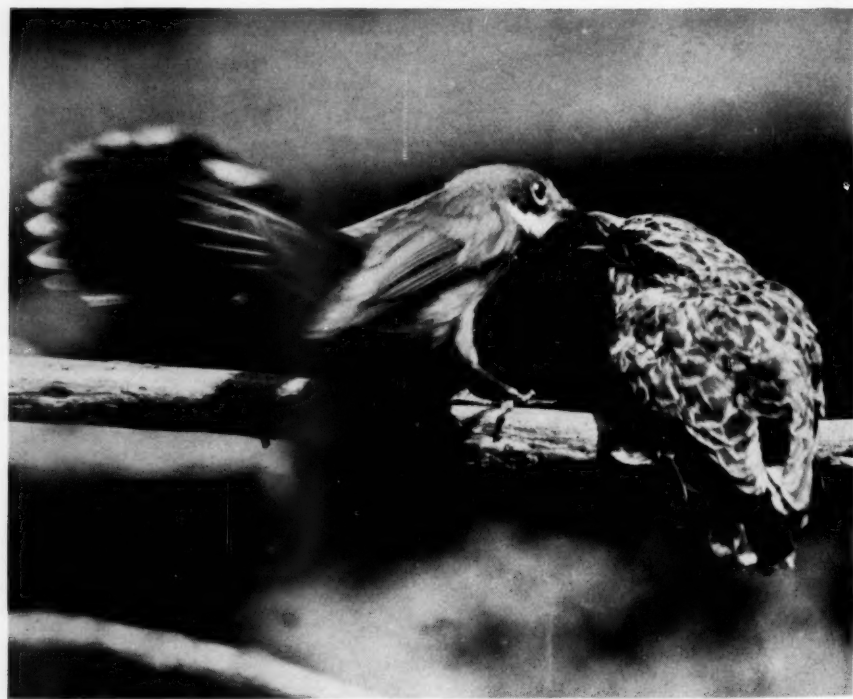
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CONTENTS

THE CUCKOO PROBLEM IN AUSTRALIA. By A. H. Chisholm. (Plate XI)	385
ANDREW J. GRAYSON: THE AUDUBON OF THE PACIFIC. By Juliette Mouron	
Hood	396
NOTES ON THE NESTING AND FEEDING OF A PAIR OF BLACK-THROATED GREEN	
WARBLERS. By D. K. Reading and S. P. Hayes, Jr. (Plate XII)	403
A BELATED HUMMINGBIRD. By Minna Anthony Common	408
SOME OBSERVATIONS OF THE NESTING HABITS OF THE BARN SWALLOW. By	
Wendell P. Smith	414
THE VOICE OF THE GOLDEN PLOVER. By Charles A. Urner	420
<p>GENERAL NOTES.—Leach's Petrel Breeding in Massachusetts, 426; Anhinga Nesting in Liberty Co., Ga., 427; Spring Migration of the Great Blue Heron, 427; American Egret at Kingsville, Ontario, 428; Louisiana Heron, in Centre County, Pennsylvania, 428; The Jabiru in Western Guatemala, 429; Roseate Spoonbills and White Pelicans in Brevard County, Florida, 429; European Teal on Long Island, New York, 429; Courtship of the Hooded Merganser, 430; Turkey Vulture at Chicago, 431; Partial albinism in <i>Catartes aura septentrionalis</i>, 431; Golden Eagle in Louisiana, 431; <i>Pedioecetes phasianellus kennicottii</i> Revived, 432; Extralimital Records for Baird's Sandpiper, 433; Breeding Range of Herring Gull Extended, 433; Little Gull again in Upper New York Bay, 434; Migration of Brunnich's Murre along Shore, 435; "<i>Nyctale fasciata</i>" of Berton, 435; Indiana Specimen of Great Gray Owl, 436; Long-eared and Short-eared Owls in Northwest Arkansas, 436; An Albino Short-eared Owl, 436; An apparently Unnoticed Trait of Whip-poor-will, 436; A Male Kingfisher Incubating at Night, 437; Male Woodpeckers Incubating at Night, 437; Yellow-bellied Sapsucker Breeding in the Virginia Blue Ridge, 437; Prairie Horned Lark Summering in Lancaster County, Pa., 438; Prairie Horned Lark Breeding at Mount Holly, N. J., 438; Nesting of the Prairie Horned Lark in Central Virginia, 438; Barn Swallows Breeding on the Gulf Coast, 439; A Late Nesting Colony of Cliff Swallows at Lexington, Va., 439; Robins Nesting in Extreme Southern Louisiana, 439; Starlings Wintering in Central and Western Texas, 440; Golden-winged Warbler Feeding on Larvae of <i>Talponia plummeriana</i>, 440; Brewster's Warbler in Ashtabula County, Ohio, 441; American Redstart Breeding in North Louisiana, 441; Color of the Iris of Brewer's Blackbird, 442; Unusual Behavior of Female Summer Tanager, 442; Pine Grosbeak Nesting in Connecticut, 442; Apparent Range Extension of the Eastern Savannah Sparrow, 443; Gambel's Sparrow in Ohio, 443; Notes from the Coast of Connecticut, 444; Notes from the Connecticut Valley in Massachusetts, 445; Notes from Jones Beach, N. Y., 445; Notes from the Virginia Mountains, 447; Summer Records from the Virginia Piedmont, 448; Some Breeding Records for Ohio, 448; Notes from Eastern Kansas, 449; Records from the Dominican Republic, 450; Birds Eating Sawfly Larvae, 451; Some Bird Enemies of Odonata, 452; Flight Speed of Some Birds, 452; A Suggestion for a Scientific Method of Studying Bird Sounds, 453.</p>	
<p>RECENT LITERATURE.—Boulton's 'Traveling with the Birds,' 455; Taka-Tsukasa's 'The Birds of Nippon,' 455; Stuart Baker's 'Nidification of Birds of the Indian Empire,' 456; A Vermont Bird List, 456; Wetmore and Brooks on Eagles, Hawks and Vultures, 457; Annual Report of the Hawk and Owl Society, 457; Yearbook of the Indiana Audubon Society, 458; Breeding Colonies of the White Pelican, 458; Other Publications, 458; The Ornithological Journals, 460.</p>	
<p>OBITUARY.—Barton Warren Evermann, 465.</p>	
<p>NOTES AND NEWS.—Jubilee Meeting of the A. O. U., 467; Eighth International Ornithological Congress, 467; Harry S. Swarth, personal mention, 468; F. M. Chapman's autobiography, 468; University of Wisconsin Chair of Game Management, 468.</p>	



UPPER—WHITE-BROWED SCRUB-WREN FEEDING YOUNG FAN-TAILED CUCKOO.
LOWER—RUFIOUS FAN-TAIL FEEDING YOUNG BRUSH CUCKOO.
PHOTOGRAPHED AT SYDNEY, AUSTRALIA, BY A. H. CHISHOLM.

THE AUK:

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OCTOBER, 1933.

No. 4.

THE CUCKOO PROBLEM IN AUSTRALIA.

BY A. H. CHISHOLM, C. F. A. O. U.

(Plate XI.)

It is an odd fact, and one to be lamented, that Australians have done little sustained work among their country's representatives of a very remarkable family of birds, the cuckoos. This relative failure may be due in part to economic reasons and to our extensive distances. It may be due also to the competitive lure of other extraordinary birds with which this "last, lone continent" abounds. As an anomaly, however, I fancy it is due largely to our embarrassing variety of cuckoos.

Australia contains no fewer than fourteen species of these birds, ranging from robust creatures as large as pheasants to beautiful little birds scarcely larger than sparrows, and all but one are parasitic. Sydney itself is surely the most cuckoo-haunted city in the world, since in any normal springtime one may see or hear nine species of cuckoos upon its fringes, and some of them occasionally near the center of the city. I imagine that if all these birds belonged to one species, migratory for preference, they would offer a sharper challenge to nimble wits. As matters are, their very variety is disarming; it causes them to blend unostentatiously with the general bird-population.

However that may be, what watcher of wild birds in Australia would care to think of this continent without its cuckoos? They are not, as one may say, neighbourly birds. They are for the most part undistinguished in form and plumage and flight, and

not one of them could fairly be termed a songster. Yet there is something appealing about these feathered outcasts: something admirable in the bland defiance that carries them through all tribulations in a hostile world and enables them to populate every portion of the continent, from the jungles, forests and heath-lands of the coastal areas to the great lonely spaces of the interior; and, moreover, there is something wistful in their voices, which, however irritating when heard all through the night, possess an "airiness" that never permits them to become prosaic.

One should, I think step warily when striving to interpret bird-voices. It may be sufficiently obvious that a bird singing heartily, and with every indication of good cheer, is in fact expressing pleasure; but it does not necessarily follow that a bird whose customary notes fall plaintively upon our hearing is indeed feeling forlorn. And yet, is it not a striking fact, that although the voices of Australian cuckoos vary so widely, every one of them conveys a strong suggestion of melancholy?

Listen to these wails and trills and screams, and almost you will be persuaded to believe that the sense of dolour is not merely a human interpretation: that although these may be mating-calls, the cuckoos have acquired over the centuries some consciousness of being outcasts, and are expressing vocally the loneliness of the non-normal.¹ Listen in particular to the trilling wail of the Fantailed Cuckoo falling through darkness and continuing with the dire insistence that has caused its author to be termed the "Brain-fever Bird"; or listen to the gasping notes of the Brush Cuckoo issuing from a jungle at midnight; or, again, listen to the high-piping monotone of a Bronze Cuckoo emulating the shrilling of a high wind: listen to any or all of these cries and you cannot avoid the conclusion that here is Loneliness, utter and inescapable; here, in the voices of birds, is the spirit of Masfield's Seekers:

"There is no solace on earth for us, for such as we . . ."

I would not have it thought, however, that every cuckoo voice in Australia is entirely dolorous. The Pallid Cuckoo, for instance, can not be credited with melody, but there is a certain heartiness,

¹ Perhaps there is some evidence here to support the theory of exponents of the theory of territory in bird-life that song is prompted by, or has been developed upon, territorial considerations.—A. H. C.

perhaps an element of "earthiness" in its curious, throaty, ascending call. This bird is, moreover, a definite harbinger of spring in southern Australia, and many people who know nothing of its loose domestic habits are familiar with and cordially welcome the salutation that has caused this cuckoo to be known as the "Scale-Bird." No enterprising boy who takes part in the Bird Call competitions conducted annually in Sydney would dream of omitting the chant of the Pallid Cuckoo from his repertoire. I suspect this popularity to be due not so much to the quality of the cuckoo's call as to its setting in the chorus of early spring; were the same deliberate whistle heard only at night it would be voted eerie.

Further north, in sub-tropical areas, the Koel, or Black Cuckoo, is equally persistent as a harbinger of spring, a fact to which Brisbane newspapers bear witness each September, for they never fail to receive then, reports from rural areas to the effect that "Last night I heard my first Cooee-Bird for the season." Here again it is probable that relatively few people know of the bird's domestic misdeeds; it is the appealing voice that grips them. The voice of the Koel is indeed one of the most notable of bird-utterances, its chief feature a full-throated "Cooeeee" and an equally resonant "Too-wong"—melodiously contralto calls which by reason of their vowel stress contain a suggestion of "the moan of doves in immemorial elms." It has been suggested that the distinctively Australian *cooee* had its origin in the voice of this bird. Be that as it may, the Koel did in fact furnish the name of one of Queensland's largest metropolitan suburbs, Toowong; for to this locality long ago the "Cooee-Birds" came abundantly to feed upon cockspur berries, and in the process of telling their name to all the hills, unwittingly contributed a geographical label.

Voice again is the dominating factor in the popular recognition of the Channelbill, which, two feet in length, is easily the largest of Australian cuckoos. This bird, too, is a migrant, but no harbinger of spring; it drifts down the eastern coast with the coming of summer, and by reason of its screaming prelude to the heavy rains of the tropics it is frequently known as the "Storm-Bird." This great bird is, to speak mildly, the least appealing of the cuckoos. One need have no personal objection to the deception it practices in foisting its family responsibilities on to magpies and Currawongs,

and need not hold the bird to blame for its top-heavy suggestion of the hornbills; but one cannot readily forgive it that appalling scream, a blustering outburst that has not even the saving grace of revelry. To listen to the Channelbill is to mourn the probability that several young magpies, singers in the making, died to make room for this uncouth giant.

Many birds of Australia, as is the case in other countries, are esteemed because of their sociability. It will be clear that this does not obtain with the cuckoos, even allowing for the element of wistfulness which I have suggested is present in the notes of many species. And yet the hand of man, destroyer of so many irreproachable birds, is rarely raised against a cuckoo. I do not suppose that this freedom from molestation is due to the skulking nature of the various species, or even to public ignorance of their murderous tendencies; it is due rather to the fact that cuckoos do not directly affect man or his products, whereas if they were occasionally fruit-eaters, like some of the honeyeaters, or were edible, like the pigeons, they would be much less abundant than they are.

With bird-students the outlook is different. We are impelled at times to give serious thought to the menace of the cuckoos, recognising that their birth-rate implies a commensurately larger death-rate among other insectivorous birds, and recognising also that intense parasitising may gravely decimate the numbers of a restricted species. What, for instance, of the Rock-Warbler, a bird found only in the sandstone areas near Sydney? Is it likely to be endangered by the ravages of the Fantailed Cuckoo? I suggest that in such cases we may well have faith in Nature, realising that even if excessive attention by cuckoos seriously decimated a species, the consequent shortage of nests would react against the cuckoos themselves and cause them to "break in" new fosterers.

Realising this, we may peep into a honey-birds' nest and, seeing there an egg slightly different from the others, we may reflect that here is a murderer in the making, and that both sentimental and economic interests would be served by removing this egg and saving the lives of unborn honey-birds; but upon further thought (unless we be merely egg-collectors), we will not interfere. Full

often, too, we may come upon a robust young cuckoo luxuriating in a flycatchers' nest, the bodies of the baby flycatchers cold in death below, and the misguided foster-parents working themselves thin in the interests of their changeling, and again we may feel an impulse to right this wrong; but again, if we are discreet, we will set aside the merely human view and refrain from meddling in a drama that is, in plain fact, no concern of ours. Far better to let the uncanny process run its course, to mark carefully and marvel at all developments associated with that menacing egg, and to endeavour to trace through these factors the origin and history of avian parasitism.

Is there, after all, any need to look far for the beginning of this remarkable habit? Are not its early stages suggested by the behaviour of particular birds today? I think here of two Australian species, widely dissimilar. The Large-billed Scrub-Wren, a jungle denizen, consistently lays its eggs in disused nests of the Yellow-throated Scrub-Wren; I have found eggs under these circumstances on many occasions, and have only twice seen the real nest of the Large-bill. Secondly, the Blue-faced Honeyeater has so strongly developed the practice of re-furnishing old nests of the Babbler, Magpie-Lark, etc., that its original nest, a saucer-shaped structure suspended among leaves, is rarely found today.

What do these cases imply? Surely the evidence suggests that in course of time the Large-billed Scrub-Wren and the Blue-faced Honeyeater, perhaps by reason of successive generations inheriting tendencies towards nest-stealing, may lose either the desire or the ability to build nests, thereby becoming wholly dependent upon other birds for homes. It must inevitably happen, if the drift extends thus far, that there will not be sufficient disused nests to go round, upon which the homeless birds must either oust other birds or drop their eggs in with other clutches. And once the habit of depositing eggs in occupied nests of other birds is developed with some consistency, surely we are in sight of complete parasitism!

It seems to me, however, that the *origin* of parasitism is not the most appealing problem associated with cuckoos. How much more fascinating is it to study the incidence of the habit, to mark how these strange birds have been taught to be cautious by their very

dupes, and to follow the dramatic career of the young cuckoo in the nest!

Why is it, to begin with, that birds generally recognise the cuckoo menace only up to a certain point? When, for instance, a Koel enters the territory of Friar-Birds, these truculent and noisy honeyeaters attack the cuckoo so fiercely that they sometimes beat it to the ground; yet when the Koel steals her eggs into Friar-Birds' nests those eggs are contentedly brooded and the young Koels that appear later are reared with thorough solicitude. And so it is with other fosterers in relation to other cuckoos. It may be urged, of course, that birds do not recognise cuckoos as cuckoos—as borrowers of nests—but attack them merely because they are territorial intruders. If this be so, why do many birds fly into a frenzy at the mere call of a cuckoo during the breeding season and pay no heed to it at other times? I cannot take this delicate point to any definite conclusion, my only suggestion being that the potential fosterers attack cuckoos because they recognise them, in some degree, as *meddlers* at nests, without appreciating what that meddling portends.

Following hard upon the anomaly cited above is the puzzle as to how the intruding egg is deposited in a nest. This is one of the most debated points in cuckoo lore; there has been much argument about it, and the end is not yet. Whatever be the case in Europe, there can be little doubt that some cuckoos in Australia sit upon the chosen nest to lay and others deposit the egg with the beak. Direct deposition is, of course, the "natural" method. I take it that this course is always followed by the large Channelbill, which patronises the sturdy, stick nests of crows, magpies and Currawongs, and also by the Koel, which favours chiefly the commodious, open nests of friar-birds, orioles and fig-birds. We have, indeed, a record of a Channelbill being seen to sit upon a nest, and several records of Koels being seen to do likewise; and in each case the cuckoo's egg was subsequently found in the nest. Possibly some of the smaller cuckoos occasionally sit upon the nest to lay, but this is a sheer impossibility in most cases.

I believe, therefore, that as a rule the female cuckoo (of the smaller species), inspects the nest in advance, and if it be either too small or too fragile to enter, she lays upon the ground, takes

the egg in her beak, flies quickly to the "marked" nest, clings to the side or some other convenient support, and drops the egg gently into the chamber, after which she seizes one of the fosterer's eggs and flies off, dropping the stolen egg as she flies. There are records in Australia of cuckoos being shot while carrying eggs—their own eggs—and of others leaving eggs on the ground when disturbed.

There appears to be a popular impression that cuckoos are lazy and careless birds—inconsequential creatures that deposit their eggs in haphazard fashion and leave the continuance of their race to chance. Actually, there is probably more energy, more resolution, and more individuality involved in the exercise of the parasitic habit than in the building of a nest and rearing of young; and as for the charge of carelessness, you have only to look well into the subject to realise that lapses are relatively few, that they are due almost entirely to stress of circumstance, and that they are in fact calculated to place a healthy check upon Cuckoos when the numbers threaten to become too numerous.

It will be well, however, not to go to the other extreme and acclaim the cuckoos for supposed high skill in selection. The credit lies rather with the more intelligent of the fosterers; for these birds, by deserting damaged nests and rejecting unsuitable eggs, have actually "trained" the parasitic birds to their present skill. Applaud the cuckoos for their adaptability if you will, since they have overcome all obstacles to their parasitic progress, but save a word of commendation for the effective manner in which the little fosterers have applied the pressure of natural selection.

It might perhaps be argued that the large number of fosterers patronised by certain Australian cuckoos indicates marked looseness in selection; for the Pallid Cuckoo has been shown, on the basis of merely *one* egg-collection, to have "borrowed" the nests of no fewer than 81 species of birds, the two common Bronze Cuckoos 64 species each, and the Fantailed Cuckoo 43 species. Actually, however, each cuckoo favours a few particular fosterers, and only when the supply of such nests falls below the demand do they turn to other kinds.

There is a theory, somewhat timidly advanced, that a female

cuckoo will give first choice to the kind of nest in which she herself was born. This proposition is hedged with difficulties, but it seems to me on the whole a reasonable assumption. Such an action would appear to be a natural one—on the part of an “unnatural” bird! What are we to assume, however, in the case of cuckoos which “fluke” their way into this troubled world in unusual nests? Does it follow that environmental leanings will cause them to endeavour to make those unusual fosterers less unusual?

Suppose, too, that a female Fantailed Cuckoo born in a robin's nest had for mate a male born in a honeyeater's nest—what then? At a guess, I should say that this would make little difference, since it is doubtful (and especially so in the light of the suspicion that cuckoos are polyandrous or promiscuous), whether the male exercises any influence on the choice of nest or colour of eggs. Suppose again that a female Robin-Cuckoo mated with a Honeyeater-Cuckoo, A Wren-Cuckoo, and a Flycatcher-Cuckoo, and that each male exercised some influence in respect of nests and eggs—what a pretty tangle the lady would be in! And what a sad waste of all her “inherited training” in the principles of natural selection! For surely this law would be strained to breaking-point—it could not, for instance, achieve harmony in egg-colors—if it were continually disturbed as a result of “mixed marriages” among cuckoos!

The late H. L. White, who got together Australia's largest collection of birds' eggs, was firmly of opinion that each species of cuckoo has favorite fosterers, that these are not numerous in any case, and that when open nests are used there is a broad, and sometimes striking, similarity between the egg of the cuckoo and that of the regular fosterer. “There is no doubt in my mind,” he wrote, “that Australian cuckoos which lay in open nests usually select as foster-parents those birds whose eggs nearly approach their own in colouration.” He had in his collection scores of clutches that apparently refuted this view, but these he described as “chance” combinations, leaving perhaps 90 per cent that harmonised.

It is probable that Mr. White's view was based largely on the Pallid Cuckoo, which exhibits a strong preference for open nests and which lays a pink egg, so like many honeyeaters' eggs that it is sometimes difficult to distinguish them. This, it may be said,

is an eloquent instance of natural selection; the fosterers, being able to see the eggs, have gradually eliminated unfavorably colored ones and "trained" the cuckoos to egg-harmony. Why, then, is the color-harmony equally striking in the case of the Black-eared Cuckoo, which has only two regular fosterers, the Speckled Warbler and the Red-throat, both of which build *domed* nests? In each case the egg of the Black-eared Cuckoo, so unusual and attractive in its reddish-brown colour, so closely resembles that of the fosterer that it may be separated only by rubbing off the pigment, which in the fosterers' eggs is ingrained in the shell.

Some few other points of interest in regard to cuckoos' eggs, with the H. L. White collection as a basis, remain to be stated. The Channelbill (4 fosterers), and the Koel (11 fosterers), patronise only open nests, and the Black-eared and Chestnut-breasted Cuckoos only domed nests; all other cuckoos use both open and domed nests. Of the 81 fosterers recorded for the Pallid Cuckoo, however, 72 build open nests, including 34 honeyeaters, whereas the Fantailed and Bronze Cuckoos show a general preference for domed nests. The doubtful honor of being host to *six* species of cuckoos (in various parts of Australia), is held by the Red-backed Wren; several other birds, notably robins and fantails, have acted from time to time as host to *five* species of cuckoos. In addition to having the largest number of dupes, the Pallid Cuckoo holds the record for extremes, since it ranges from nests swaying perilously in the tree-tops to others built right on the ground, and, moreover, its egg has been found in the nest of the Magpie-Lark, a bird as large as a pigeon, and in that of the tiny Emu-Wren, whose body is scarcely more than two inches long.

An elusive little problem, upon which Australians hope to concentrate shortly, is involved in the question as to whether any female cuckoo, having found suitable fosterers, takes any further interest in her eggs or young in the various nests. I incline to the view that she does, but only vaguely. Since the cuckoo has no brooding to do, she might as well exercise vigilance as do nothing; and certainly she does "stick around," for if a nest containing a cuckoo's egg is disturbed and a second one is built, you may look with confidence for a cuckoo's egg in the new nest. Possibly there is a hint upon this point to be gained from the fact that there is

usually more than one young Channelbill in a crow's or a magpie's nest. Dr. W. Macgillivray deduces from this fact, and marvels accordingly, that the young cuckoos (while still blind and naked), are able to distinguish each other and thus eject only their foster-brethren. Surely this is asking too much, even of such amazing birds as cuckoos! I would prefer to assume that the adult Channelbill revisits the nest and carries out the ejections. Indeed, it seems very doubtful if young Channelbills ever throw out eggs or young under any circumstances. Crows and magpies, unlike smaller birds, are well able to feed both their own offspring and young cuckoos, and (again unlike smaller birds) there is room in the nests for both: wherefore, it appears probable that the infantile "touchiness" has disappeared in this case. Anyway, there are several records of fosterers rearing both their own young and Channelbill Cuckoos at the same time.

Ejection of eggs or young by blind and naked baby cuckoos of the smaller species has, of course, been witnessed on various occasions in Australia. No one has seen an adult cuckoo assisting in the ejection, and we do not believe (in spite of a European suggestion on the point), that this is ever the case, the baby cuckoos being quite well equipped for fighting their own battles. Whether the mother cuckoos assist in the feeding later is another matter. We have at least one Australian case of a cuckoo being seen to visit a nest and feed a young cuckoo, and two sound observers have given particulars of young cuckoos that had left the nest being fed by adult cuckoos as well as by the fosterers. I am convinced, however, that these odd cases are merely exceptions that prove a rule, and that the smaller cuckoos, at all events, customarily leave the feeding of their young entirely to other birds.

Recent breeding seasons have been bountiful ones for cuckoos about Sydney, due probably to heavy rains and consequent lushness of vegetation. We have, in fact, seen so many of these parasites preying upon other birds from late August to late January, that the old question has arisen as to whether the cuckoos are worth the mortality they entail. A student of cuckoos in England suggested a few years ago that there were approximately 1,250,000 cuckoos' eggs laid in the United Kingdom each spring, at an average

rate of 10 to each pair of birds. If this be broadly correct, imagine how many cuckoos' eggs are deposited each year in Australia, with its vastly greater area and twelve more species of avian parasites; and imagine in turn the countless number of other birds that are being sacrificed every year by the adult cuckoos removing eggs and the infant cuckoos slaughtering nestlings!

On the other hand, however, the cuckoos have a place of their own in natural economy because of their fondness for caterpillars. An amazing indication of the capacity of the parasitic birds in this respect was given by a young Bronze Cuckoo which was kept in an orchard in Victoria; this bird, no larger than a sparrow, ate at one meal over 300 caterpillars of the codlin-moth (taken from a bandage on a fruit-tree), and it maintained the healthy average of 260 to each meal!

All things considered, therefore, it may be that the Cuckoos justify their existence on an economic basis; and as for the ethical aspect, even if we wonder why Nature developed the lopsided process of avian parasitism, we need not necessarily follow the English curate who made a practice of shooting cuckoos because "they are such immoral birds!"

"Daily Telegraph"

Sydney, Australia.

ANDREW J. GRAYSON: THE AUDUBON OF THE
PACIFIC.

BY JULIETTE MOURON HOOD.

IN the Capitol at Washington, D. C. is a celebrated painting entitled "Westward Ho," by Emanuel Leutze, a German-American historical painter of the Düsseldorf school. It depicts emigrants crossing the great plains and in the painting are full length portraits of a man of splendid physique, with his wife and child. Such groups had a prominent part in the colorful pageant that graces the highway to historic and romantic California and the dreamy south coast of the Pacific.

Behind a similar trek is another picture. In Louisiana, on the Ouachitain, in 1819, a babe, Andrew J. Grayson first saw the light of day. His boyhood was spent in the backwoods and there in the forest primeval, among birds and flowers, the youth imbibed a love of Nature. The first glimmerings of genius in the child were crushed by a misunderstanding and brutal teacher and an unappreciative and unsympathetic father. His aspirations were clouded by discouragement and he went through college much as other youths and later took up a business life, in which, like most men of an artistic turn of mind, he soon failed.

In 1846, the overland tide of emigration was sweeping toward California. None but the most daring spirits of that day would risk their lives on arid plains and savage wilderness that separated the great central valley of the continent from the Pacific Ocean. Of these, Andrew J. Grayson was one. He advertised in the St. Louis papers of that day and soon called together resolute men and women equal to the undertaking and organized a train which joined the westward trekking caravan. Ex-Governor Boggs of Missouri, with his train accompanied that of Grayson and to their number was added the historic Donner party whose separation from them at Fort Bridger led to their terrible fate.

The Graysons experienced no difficulties, as they escaped the rains and the extreme heat. They were blessed with good health and were well provided for with fresh provisions. Each day, for

five months and a half, the train traveled from four to twenty miles. The Sierras presented the greatest difficulty, but the Graysons succeeded in crossing them in four days.

Upon their arrival in San Francisco, which was then but a mere hamlet known as Yerba Buena, Andrew Grayson offered his services to the State and joined Frémont's battalion, and was honored by Commodore Stockton with a commission. His duties kept him in and about San Francisco, which made it pleasant for his wife and child. Professor Chester Smith-Lyman, who visited San Francisco in 1847, noted in his diary: "Thurs. July 15, 1847,— Got a horse from Mr. Ridley and at 10½ A. M. started for a ride with Mrs. Grimes and Mrs. Andrew J. Grayson. We rode over a very sandy road to Mission Dolores, about three miles south west of the town. We found Mrs. Grayson to be very ladylike and intelligent. She came with her husband over the mountains last fall."

When the hostilities engaging Frémont ceased, Colonel Grayson decided to enter into business. He opened the first stationery store in San Francisco, in the City Hotel, corner of Clay and Kearney streets. Later he became interested in a store with a Mr. Stephens, in Stockton, California.

On the west bank of the San Joaquin River, about two miles from where the Tuolumne empties into it, was a picturesque spot overlooking the curving contours of the San Joaquin, the intervening valleys and plains with the beautiful Coast Range forming a frame for the whole. The site appealed to Colonel Grayson's artistic mind and in January 1850, he decided to locate there. Friends as well as himself were impressed with the location, as a choice site for a city, as travel to the rich southern mines was heavy and the commercial prospects were good.

In February 1850, a meeting was held for the purpose of organizing a city. It received the name of Graysonville in honor of its founder. A ferry was established and Grayson moved his store from Stockton to his dream city. Travel and trade to the mines created a business activity and the new city flourished. Lumber for the Grayson House came from the East 'round the Horn. In 1852, the mining trade and travel were diverted to Stockton and Graysonville declined. Colonel Grayson then removed to San

José. The fortunes of Graysonville rose again in the sixties and it became a place of importance, but the coming of the iron horse tolled its knell.

In 1855, Grayson's attention was accidentally redirected to ornithology, by a volume of Audubon's, 'Birds of America,' which he discovered in the Mercantile Library, and so awakened was his youthful ardor for the pursuit that he resolved to abandon all else and devote the rest of his life to science. He studied drawing and in three years had painted and described most of the birds of California.

During 1856, while the Graysons were living in San José, their home was known as "Bird Nest Cottage." It was while there, that he sent a letter to Bishop Kip, thanking him for a book and praising a Miss Cooper, who had written it, for being such a close observer of nature. A quotation from the letter says: "How much more happy and pleasing it would be if others of her sex would keep such a journal instead, as is often the case, of devoting their time to so much idle gossip and fashions."

In 1857, with his wife he sailed down the dreamy coast of Tehuantepec, Mexico, but their vessel was wrecked at Ventosa and Grayson found himself without money or friends in a strange land. Getting employment temporarily, in surveying a town for the Tehuantepec railroad, he replenished his purse and went on with his ornithological work. Returning to San Francisco, he sold his collection, from stress of pecuniary circumstances, and it was carried east where a part of it found its way to the Smithsonian Institution.

About this time, 1859, Grayson and his wife visited the valleys of northern California. They visited Napa Valley and then went to Calistoga, which was at that time a sheep ranch belonging to Sam Brannon a prominent pioneer. Under letters from Brannon to his herder, they were made welcome to the ranch. Here Grayson made drawings and secured specimens of all the birds in the valley. It was here also that the celebrated drawing of the Quail was made. It was later lithographed and in that form adorned thousands of homes throughout the land.

Soon after, Grayson again made a trip down the Mexican coast with Hutchings of Yosemite Valley fame. In a small canoe, the

"Wanderer," they explored the region about San Blas. This trip caused Grayson to decide to return and locate permanently in Mazatlan.

Colonel Grayson's collection of 150 beautiful pictures of Californian and Mexican birds was examined by Maximilian and his Empress Carlotta, during the brief existence of his "empire" and so pleased was the Emperor with it, that a contract was made with the Academy of Arts and Sciences at the city of Mexico for its publication in Europe and for furnishing the means for its completion. The downfall of the empire, however, prevented the fulfillment of the contract.

A letter of Grayson's to the Academy directors, tells us something of his work:

"To the President and Members of the Academy of Sciences, Mexico.

Sirs:—I have the honor of making the following report to the Academy of my progress in ornithology since my departure from the Capital in April last.

(1)—I proceeded at once to Guadalajara District and to the region surrounding the lakes, which has been but little explored, where I commenced my researches. I am happy to say that in this region I made many valuable collections, for the continuation of my work on the "Birds of Mexico" and am still further pleased to state to the Academy, that I had the good fortune to make some new additions to the birds of my collection that have not been discovered before and which will now first be made known to the science of Zoology, in my forth coming work on the "Birds of Mexico."

(2)—After I had exhausted the meat of ornithology which I required most, so far as my time would permit in the District of Guadalajara, I proceeded to the District of Tepic, where I made another collection of great interest.

(3)—In order to replace the articles which I lost upon the road by the depredations of the ladrones—such as my gun, ammunition, drawing materials, paints etc., I found it necessary to come to Mazatlan in order to send directly to San Francisco for these articles; this I did and have already recovered them. I am now engaged upon my drawings of the birds lately collected and in writing their descriptions, which will occupy me for the next three months. It was my intention to have transmitted all of my collection to the Academy before this but as the rainy season was at hand, by the time I reached here, I deemed it most provident not to venture the chances of having them damaged by rains or perhaps by the ladrones, that now infest the route. Taking these things into consideration, would it not be better for me to wait until

the rains have passed and then go with them myself, taking with me my drawings and descriptions in manuscript, which will then be ready for the engraver and the press? I shall however, await the advice of the Academy and go by the Academy's instructions, in what manner it would be prudent for me to proceed as the loss of such a collection could not soon be replaced and the loss of the drawings and manuscripts would be irreparable, that the Academy can well conceive.

The Academy may be assured that I shall use every precaution that enthusiasm and ambition can make possible to accomplish this work with satisfaction to the Institution as well as with honor and distinction to myself.

In conclusion, I offer my thanks and gratitude to the men of this worthy Institution for having conferred upon me the agreeable task of producing a work upon the "Birds of Mexico," which has been my study for so many years. I shall devote myself closely to the fulfillment of my plans and endeavor to make it an ornament to the Society that has given it patronage as well as to the country of my adoption from whence the beautiful objects discovered have been attained.

I have the honor to subscribe myself,

Your servant,
A. J. Grayson."

One of the rare birds Grayson describes is the White-crested Hawk. His description states: "This remarkable species is only met with in the thick forests of the warmer regions of Mexico and South America and is common in Theuantepec and Mazatlan."

Its well known scream of "Guaco" [Waco], continues often for an hour or more. The half savage natives, the Yaquis of Sonora, have a song which is called "Guaco," in which the chorus is an exact imitation of the cry of the bird.

The following is a verse from the Yaqui Indian's song:

"Guaquito! s aum bircha, que sica-y ne'
Guaquito! cuere sainé que dura né
Guaquito! bonito cherri que istedo vente con migo
Deame in tranquito, en diras que no
Yo diré que no
Yolo quieroa V
Pero ve mi no."

The Solitary Dove was first discovered by Grayson's son, Eddie Grayson, on the Socorro Islands, May 20, 1867. In writing of its discovery, Grayson said:

"In entering upon the history of this species, newly discovered upon

the Island of Socorro, I do it with a sweetly saddened feeling in commemoration of the event of its discovery by my son and only child, the last but one of all that was dear to me upon this earth. I cannot think of the time and circumstances connected with the capture of this bird without the sensation of emotion swelling my heart with sorrow; the vivid remembrances of the last happy hours spent with my dear boy in these remote solitudes had formed a nebula around my soul, which will never be dispelled during my life.

"How well do I recollect the lovely and honest expression of his youthful and manly brow when he presented me with the first specimen of the Solitary Dove, exclaiming: 'A new dove! A new dove!' We were happy then; although our ship was a wreck and we were alone upon this solitary island far from human aid. Still we both felt a sense of inexplicable security and confidence, if not a pleasure in the adventurous situation. We were together and well; we feared nothing. In God we trusted and we both felt a pride in the sacrifices made in the cause of science. . . .

"The reader will, I trust, pardon the digression of a father in describing incidents connected with the discovery of a new species which has been so kindly dedicated to the name of my son by Professor Baird of the Smithsonian Institute,

"While we were absorbed in contemplation, a lone Dove came as if from the very depths of solitude and perched upon a neighboring rock it was the very picture of loneliness and seemed to regard us with wonder and curiosity, as much as we did in beholding its strange and sudden appearance; we knew it at once; it was the Lonely Dove. . . . Knowing it to be a stranger or rather not existing in any other part of the world, my natural conjectures were elicited in its origin. In my conjectures, I could come to no other conclusion, but that it had been here created to fill its part in the great plan of Nature. It, indeed, appeared like a thing from a spirit world doomed to wander over the solitude of this sea girt land."

The tragic death of his beloved son upon leaving the Island plunged Andrew Grayson into the deepest sorrow.

The following letter to his wife, is heart revealing:

Mazatlan, July 21, 1867.

This, dear wife, is the anniversary of our 25th wedding day and with it comes, oh, how many recollections of the happy wedded days of our begone and eventful life? A life in whose path roses have not always bloomed; but those that did bloom were sweet and fragrant. Let us remember only the flowery spots, the sunshine, and not the clouds and storms that sometimes o'er cast the happy visions of our aspiring hopes. But the mind, in spite of our philosophy, will still dream of that bitter part of yesterday,—of the glowing, youthful days gone for ever,—of

the untrodden future when we went with hand and heart so lovingly and so hopefully set out to explore its mysteries.

How many of those alluring anticipations of that future have passed unrealized with the years like autumn leaves.

Thoughts of other days,—of the loved, the lost, the distant, and the dead, which can, alas, never return again will return to memory, mellowed into tenderness by years of a checkered life. They are ended, a panacea, their recollections that soothe our afflicted hearts which die unforgotten, has at last darkened with the deepest sorrow.

This is indeed, according to custom our silver wedding. A day to be celebrated with cheerful hearts and warm greetings from friends. A day in which numerous presents, little mementoes of silver are made to the pair who have attained this period of life,—but to us come no warm greetings or those little trifles of friendship and kindly wishes. There are no friendly greetings this day for us,—the bright sunshine of our hearts of yesterday are today darkened in deepest mourning and grief."

Grayson died at Mazatlan on August 17, 1869, and Mrs. Grayson, the life companion and devoted assistant of her husband, in all his labors, and who followed him in every vicissitude, became the wife of Dr. G. B. Crane of St. Helena, California.

The portfolios, of his paintings, faithfully colored figures of the feathered songsters and rare birds of California and Mexico, acknowledged by critics to be only second to the work of Audubon, were exhibited at the Centennial Exposition, in Philadelphia, and later, about 1879, donated to the University of California.

In the Bancroft Library of the University, repose these volumes of original drawings in colors, unfaded, of the birds of the Pacific Slope. Volume I contains 80 plates of 150 birds while in the second volume there are 74 plates of 143 birds. Many of the drawings were made from living birds. Much of the material here presented was obtained from original manuscripts in the same institution through the courtesy of the Director and has not been previously published.

As Grayson did for the Pacific Slope what Audubon did for the Atlantic, he well merits the title of "Audubon of the Pacific."

Sonora, California.



BLACK-THROATED GREEN WARBLER.
ADULT AND YOUNG.

NOTES ON THE NESTING AND FEEDING OF A PAIR OF
BLACK-THROATED GREEN WARBLERS.

BY D. K. READING AND S. P. HAYES, JR.

Plate XII.

ORDINARILY, one thinks of wood warblers as shy and retiring birds, as recluses of the deep forests, far from the habitations of mankind. This is the story of a pair that, unwittingly having nested in a public place, carried on their activities with a rather amazing disregard for the attention of the humans they often seem to avoid.

In June of 1930, on the first Sunday of the camping season at Camp Becket-in-the-Berkshires, about three hundred persons were attending the outdoor service in the Chapel by the lake. In the midst of it, our attention was attracted by the sound of the wheezy lisp that distinguishes the Black-throated Green's song from all others, and then a familiar black and greenish-yellow bird alighted in the tall spruce that backs the rostrum and, without the slightest hesitation or perturbation at the unusual proceedings going on below, flew directly to a spot near the end of a limb and about fifteen feet from the ground. Again and again, as the service continued, those tiny forms darted out from the surrounding mixed woods, and occasionally we heard the weak voices of the nestlings as the parents approached.

That afternoon we returned with ladders, camera, and note book, and for more than an hour watched within a few feet the activities around the nest. One of us stood four feet above the nest, with the Zeiss roll-film camera about two feet from it, and the other stood so that his head was a scant foot under the nest. Still both parents came and fed the four young, which were about a day or two old, and paid no attention to us, although the male was a little dubious at first.

The female was by far the more industrious in feeding as well as in cleaning the nest. While the male brought food about three or four times an hour, and was never seen to remove a pellet from the nest, the female came nine or ten times an hour, usually brought

more than did the male, and almost always took a pellet in her bill as she left. Twice she gobbled up the pellet on the spot, and, from our observations of other species, we assumed that this was the normal method of disposal. Infrequently, both parents came to the nest together, and on some of these occasions the male passed his load to the female to divide. Perhaps the whirr of the movie camera in use at that time caused this unusual procedure.

Observations at less than two feet revealed the tremendous value of these birds as insect destroyers. Spiders, mayflies, green caterpillars (*Anisota*), ants, small noctuid moths, ichneumon flies, crane flies, and many smaller diptera made up the whole of their menu. While the few spiders and ichneumon flies were harmless or possibly beneficial, many of the other insects were injurious.

On the following Tuesday evening, a violent thunder storm swept the region, and on Wednesday morning, July 2, one nestling was found dead beneath the nest. The three survivors, however, appeared hale and hearty, and now filled their frail nest completely. The nest was not very large and capacious anyway, and, though trimly woven of shredded bark and grasses, its shallowness and evident crowding suggested that perhaps its surviving inmates might have been partly responsible for the demise of one of the brood.

In these last two days, their voices had developed considerably and the insistent cheeping as they greeted their parents could be heard twenty rods away. They always seemed to know when one of the adults was near at hand, but just how they perceived it was never clear. Perhaps they could hear some soft call that escaped our ears. At any rate, we could always tell that the parents were near by the behaviour of the young even when we had heard nothing ourselves.

That Wednesday morning, we brought along our "Filmo 70," and, though we had serious doubts as to the reaction of the birds to its constant whirr, they soon put our fears to rest by feeding the youngsters even when the camera was moved to within a foot of the nest. The male was always a little afraid of the machine, but the female did not mind the limelight in the least.

While at the nest, we noticed an inquisitive Chestnut-sided Warbler in a maple a short distance away. He hung around for

several minutes, peering at us, until suddenly the male, ably seconded by his mate, attacked him and drove him off. A male Blackburnian met the same fate a little while later, while peacefully hunting insects in the big spruce and, about an hour after that, a Red-eyed Vireo changed his intended route at the first warning note and promptly withdrew. Curiously enough, a small family of Black-capped Chickadees travelling slowly through the spruce was totally disregarded. One young chickadee, evidently of this year's brood, sat calmly on a branch of the spruce and let us turn the camera on him for five minutes without budging. At the time, we were only about four feet away from him.

Saturday morning, July 5, we found the three fledgelings all well feathered, with small white bars beginning to appear on their wings. One, in particular, was much more robust than the others and, the moment we lifted the twigs that completely hid the nest from above, scrambled over the edge, and set sail for the great open spaces—and a rather bumpy earth. This bold sally must have heartened the others, for they too made violent efforts to escape, chirping loudly all the time.

After several ineffectual attempts to keep the three youngsters at home, it suddenly occurred to us that, already being so tame, the parents might be induced to feed the young while we held them. It would be far easier to photograph them in such a position, so we gathered them together and sat down to test our plan.

Neither of the parents had been much in evidence that morning. Even the female had been coming at half-hour intervals only, and we anticipated a long wait, though our hands were full every minute. What with the fledgelings all objecting strenuously, with mosquitoes and punkies swarming around us, and with one of us holding the Filmo and the Zeiss ready for simultaneous action, we awaited impatiently the parents' reaction to the novel situation.

Finally the female arrived. Obviously puzzled, she first went directly to the empty nest. Then, finding that deserted, she at last answered the insistent cheeping below by darting down, alighting boldly on the hands that enclosed her progeny, and feeding them there. After that feeding, they accepted their new position with more complaisance and made it possible for us to

make many movies and stills at close range. Though the male could not be persuaded to duplicate his mate's feat, she came constantly and without hesitation.

Before we left, we succeeded, after a good deal of maneuvering, in replacing all the fledgelings in the nest. That afternoon we found one some fifty yards away in a large pine, and, one succumbing that night to another thunder storm, the last left the nest July 7.

Accompanying this are our original notes and two of the many snaps we secured during that pleasant week. The movies to which we have added 500 ft. of Hermit Thrushes, Juncos and Black-throated Blue Warblers feeding their young now repose at the camp where they were originally taken, but we shall be more than pleased to show them or send them to any reader of these lines who would like to see the birds more as we saw them. Perhaps he will then experience something of what we felt as we came to know that family. There he will find the most fundamental vindication of his hobby.

Our original notes on feeding at the nest during the afternoon of June 29 and morning of June 30.

June 29, 4:20 P. M. Female came directly to the nest in spite of camera and observers, fed one young, took part of food back, fed second young—fat body of some insect—took pellet, and left.

4:35 P. M. Male. Not so tame. Reconnoitred somewhat and then jabbed a large mayfly down one youngster's throat, though he had to shove it three times to make it go down.

4:46 P. M. Female brought large black ichneumon fly.

4:54 P. M. Female and male at nest together, though female there first. She brought green mayfly, and he two noctuid moths.

5:17 P. M. Female brought robber fly and Mayfly, both to one young. Took pellet.

5:20 P. M. Male brought green Anisota caterpillar and small Diptera (Muscids?) and left hurriedly.

5:23 P. M. Female brought mayfly, took a pellet, gobbled it down, and searched, presumably for another, but left without it as the camera clicked.

5:30 P. M. Female brought Mayfly and robber fly to one young, took pellet, and left.

5:40 P. M. Both together brought Mayflies and Diptera.

June 30, 8:50 A. M. Both arrived, though only the female brought anything, another Mayfly.

- 8:57 A. M. Male appeared with green *Anisota* caterpillar and two unidentified insects. After two minutes of reconnoitering, he fed at 8:59 A. M.
- 9:08 A. M. Female brought several small insects.
- 9:10 A. M. Female brought two of the same ichneumons (?). She showed no hesitation whatsoever in coming to the nest.
- 9:12 A. M. Male brought four of the same insects.
- 9:13 A. M. Male brought a Mayfly.
- 9:14 A. M. Female brought a spider.
- 9:30 A. M. Female brought Mayfly and something else.
- 9:39 A. M. Female came with bill full of unidentified insects. She spent some time cleaning bottom of the nest.
- 9:40 A. M. Male brought a green caterpillar and two small insects.
- 9:53 A. M. Female arrived with unidentified insects, took pellet.
- 9:58 A. M. Female flew to nest for a moment but did not feed.
- 10:02 A. M. Male fed. Female heard singing nearby.
- 10:04 A. M. Male came with a spider.
- 10:08 A. M. Female arrived quite damp, brought three Mayflies and a smaller insect.
- 10:20 A. M. Female brought bill full of small unidentified insects.
- 10:29 A. M. Female arrived with a lot of small insects.
- 10:32 A. M. Female brought the same kind of insects. Left quickly.
- 10:33 A. M. Male brought a small spider and several small insects.

1269 Yale Station,
New Haven, Conn.

A BELATED HUMMINGBIRD.

BY MINNA ANTHONY COMMON.

THESE observations were made at Thousand Island Park on Wells Island in the St. Lawrence river about twenty-five miles from Lake Ontario. Where we have a summer cottage. As it is in the woods my opportunities to study birds have been especially favorable.

The wood consists of beech, ash, oak, and maple. There is thick underbrush except where a grassy glade cuts through. It was over this sunny spot that I found a nest with young of the Ruby-throated Hummingbird on the remarkably late date of August 21, 1931. The wood is on a hillside and the nest about half way from top to base. A swamp at the foot of the hill contains cattails, Joepy weed, orchids, wild buckwheat, jewelweed, etc. The many flowers always bring hummingbirds there. Six times we have found their nests, twice in an oak tree, and four times in a beech. At other times I have seen the nest-building, the eggs, the feeding of the young, but this year was the first time that I attempted to record my observations systematically.

I was weaving a seat in an ancient chair with rushes from the swamp and sat about twenty feet from the nest. When the bird approached I stopped all movement and when she left wrote down my notes.

August 21, 1931—Found nest in beech tree on a horizontal limb nine to ten feet from ground. Female disclosed its whereabouts to me as I sat on the ground nearby. She flew over my head many times. I grew curious, and watching her as she went back and forth happened to spy the tiny home. I sat about twelve feet from the nest. After much fussing she fed her young, at 10 and 11.25 A. M.

At 11.15 she alighted on edge of nest. Fed both each time. Dashed at me with a "flur-r" wing noise quite different from the usual "hum." Called young with a faint "hweek, hweek." They answered fainter than insect notes—not nearly so loud as the crickets and cicadas all about, a repeated note. "Zip-zip-zip."

August 22: 2.30 P. M.—Fed both. I was lying down on the

ground, so had to be investigated. She flew several times down to me and stayed poised in the air a few seconds about a foot from my face.

Nest on a horizontal branch which extends out over an open grass-covered spot in the woods. There is a canopy of horizontal leaves just above it. Branch size of little finger. Nest entirely above branch, where there are two side twigs. Lichens which cover it are very light colored.

The advance to the nest was very interesting. First she perched on several dead twigs near by. After reconnoitering from her outlooks, she came through the air about a foot at a time, poised and turned around to face in the opposite direction; repeated the advance; poised and turned again; and so on until she had looked in all four ways. The peculiar "whir" of her wings was noticeable at each poise. This peculiar noise when a hummingbird is near her nest is characteristic. She "squeaked" to the family as she approached.

She propped her tail against the nest when feeding her young. After a few preliminary pokes, presumably to get the youngsters bill open and her own inserted within it, she pumped the food into it. About four "pumps" to each bird.

3.20 P. M.—Drove off a catbird by flying at it spitefully; also a nuthatch that alighted on her tree trunk, and a robin that hopped too near. Fed both young. A dozen "pokes" to each.

The men of the family climbed on a chair and looked in the nest. They reported two young which they said resembled lumps of gum with bills added. The young did not open their mouths when the nest was jarred as most baby birds do. Their eyes were closed. They appeared to be naked.

August 23: 9.07 A. M.—When I was picking cattails in the swamp perhaps fifty feet from the nest the hummingbird flew all about me curiously.

Bird waited six minutes on branch nearby because of cat on the ground and two squirrels playing tag in the next tree. The nest as she had placed it could not be on a squirrel run-way as the branch connects with no other. Did the bird think of that? Every one of the six hummingbird nests I have found have been similarly situated.

9.30—Scared by my dog; watched him from a branch just above where he was lying.

9.55—Another female came visiting. No fuss whatever.

10.20—Fed both young each time.

August 24:—My husband wished to witness the feeding. Went to nest at 2.45 P. M. Bird fussed around for half an hour showing plainly she feared the stranger for she kept flying out in front of him and "standing" in the air at attention. At 3.20 she got up enough courage to alight on the nest. Husband unfortunately moved his hand. She flew straight at him. then resumed the watching. Finally out of pity for the hungry young he left.

August 25: 9.45 A. M.—I changed my usual position to one directly under the nest. Husband smoking rather near. Bird would not go to nest. Waited until 10.40, then moved to old place. In one minute she went to nest. I raised my arm. She came, hovered, returned to nest as if satisfied (husband gone in meantime). Fed both young.

August 26: 1.45 and 2.45 P. M.—Fed both young. Got insects from a large garden spider's web. Gathered as many as ten from it.

3.40—Two ladies watching with me. Fed both young.

August 27: 8.45 A. M.—Two children, the cat, the dog and I. Quiet. Fed both.

9.20:—Fed one. Dog moved his tail, bird flew over him, went back and perched an instant on edge of nest. Dog got up, she flew at him so close he shook his head. He lay down. She fed other young, looked us over from her perch for two minutes (she usually flew directly off) then left for food.

9.40:—A friend and I present. Fed both young.

10.45:—Cat, dog, three children. Quiet. Fed both young.

2.30:—Dog and I. No fussing on part of bird, just looked four ways in air as usual. Flew over us when leaving in a questioning manner.

3.00:—Fed both.

3.20:—I approached the nest, she flew at me.

3.50:—Fed both. Took 23 rapid "pokes" in one throat; 42 in the other—as fast as I could count.

4.55:—Fed both.

This day I had not left the nest all day so my records would be as complete as possible.

August 28: 8.00 A. M.—Daughter and I present. Both young fed.

8.45:—Alone. Both young fed. (Called away).

3.10 P. M.—Three ladies, dog and I. Both young fed. but in a hesitant manner and only a trifle to each.

3.31:—Two ladies and I. Fed both young well.

4.05:—Same audience. Fed one.

4.10:—Fed other. Saw bills of young above nest. Restless.

August 29: 9.45 A. M.—Baby birds poking heads well out of nest, one's whole head and neck, other's crown and bill.

I took a new position at foot of tree. Bird had accepted me when I was weaving chair seat in a certain spot, but now I became an object of suspicion. She flew about me in a semicircle, facing me all the while and "chittering" sharply and with tail spread to show white band in a curve. Clicked her bill—or so it sounded. Young crouched and very still, their bills only showing above rim. Did not feed young.

10.00:—Returned to look me over again. Did not go near nest.

10.10:—Two children, strangers, came to look at nest. One pointed it out with a stick. Hummingbird went wild and chased them away with a whiz. Flew around their heads like a wasp.

1.45 P. M.—Heads both above nest, one on each side. Considerable movement, but no fluttering of wings. Both young fed.

2.10:—Fed both. Wind blew fiercely. One stretched out of nest so far it looked risky. Young made no noticeable noise.

4.05:—Fed both. Rainy. Bills look same size whole length.

4.50:—Fed both, fussing about me all the time.

5.00:—Fed both. Young lively; heads close together on one side of nest.

5.10:—Mother watched from a branch after feeding young. Unusual. Never perched on a leafy branch, but always chose a dead one. No versatility, but approached the nest from the same direction every time using the same twigs as stopping places in the same order.

Young quite restless. Both heads well above rim.

5.40 P. M.—Fed both. I sat in a chair. Had always been on the

ground before. The change bothered her. She fussed over half an hour before she went to the nest, then stayed only a moment, stretched her head toward me, fed each young bird a little, then flew over and around me "squeaking."

August 31: 9.30 A. M.—Alone. Fed both. Young appeared to rest almost across top of nest, heads projecting in one direction and tails making a white fringe on other.

When mother fed young she clung to side of nest in an upright position, her tail braced on branch below nest. The young were now so large she had difficulty withdrawing her bill from their throats. It stretched her neck backward until she seemed in danger of a fall. High wind.

Sept. 1: Another *all day* watch.

Fed both young at 8.00 A. M., 10.30, 11.30, 12.45 P. M., 1.10, and 2.05.

3.00:—Fed one. Both young on top of nest facing in opposite directions. Mother always alighted on very same place on nest to feed birds. As she did not reach across nest she could feed only one unless they changed places and I did not see them move.

An automobile went by the country road about 100 feet distant while she was busy feeding one of the young. She flew at it; then came back. I moved my arm in an unusual gesture, she hovered above my head, then sat above me in a new place a few minutes, five to be exact and looked at me with one eye and then the other.

3.05:—Fed other bird. Reached across nest. I got a chair and tried to take a picture from underneath. Mother now gone. Both bills pointed one way. They were watching me. Then, *without warning*, one flew away. A level flight fully 100 feet and I had never seen it so much as spread a wing. Lit in a willow.

3.45:—Mother fed remaining nestling.

4.05:—Wanderer had come closer to nest into a maple. Mother fed it sitting on a branch beside it.

4.10:—Fed nestling.

5.00:—Fed wanderer.

5.05:—Fed nestling.

5.45:—Fed both, going directly from one to the other.

Sept. 2:—Other young still in nest. No exercises. For first time I saw mother approach nest from other side.

Sept. 3: 9.30:—Fed young in nest (cloud burst in night).

10.00:—Young *not* in nest. (I had had to go in house a moment.)

10.10:—Mother approached nest as usual evidently not knowing young had left. Lit on rim. Left. Sat on perch. Left.

10.30:—Lit on nest again, no young of course. Flew to top of tall tree near by. (Top dead). In five minutes flew down to a dead twig in another tree and fed young there.

12.00:—She came again. Approached in usual manner, but did not alight.

1.00:—She came to tree, buzzed about but did not approach nest.

Sept. 4:—Fed both young in vicinity of nest, but not together. Flew over and around nest several times, but did not alight near it.

Sept. 5: 6.00 A. M.—Fed young in top of tall tree about fifty feet from nest twice at half hour intervals.

Sept. 6 and 7:—Not seen.

Sept. 8:—Saw a hummingbird in touch-me-nots. May have been another.

Note:—Never once saw a male bird during this whole time.

Watertown, N. Y.

SOME OBSERVATIONS OF THE NESTING HABITS OF
THE BARN SWALLOW.

BY WENDELL P. SMITH.

THE following notes are concerned with a pair of Barn Swallows (*Hirundo erythrogaster*) that nested in one of a group of buildings close to the observer's home. This building was a shed, the loft of which was used for the storage of hay. Underneath the V-shaped roof there always exists a varying amount of open space and upon a rafter at one end of the loft, near the only window, the nest was located. A projecting nail afforded support for this, and a similar foundation slightly lower on the same rafter bore the remnants of an older nest. Whether due to the restricted size of the lighted area, the absence of any more projections for support, or other factors, the breeding birds of this species were limited to the one pair. As other suitable locations were some distance away, no difficulty was experienced in following their activities during most of the nesting season. We were handicapped in our observations, by insufficient light from the one window; by the short distance separating the nest from the window, which afforded means of entrance and exit, making impossible a satisfactory view at times, and by lack of time for continuous observation. With a few exceptions some time each day was spent in watching and we feel that the notes, although fragmentary, may be of some value.

It is probable that the pair arrived on May 8, 1930, for while Barn Swallows had been seen for one week before that date, they had not frequented this particular territory as did the pair that appeared on the 8th. Three days later, on the 11th, they were seen examining the nest in the loft and on the 13th, transportation of nesting material began. This consisted of clay mud and bits of straw obtained from the vicinity of a spring, one hundred feet distant. Work on the nest was not extensive but a new rim was built on and the lining was replaced. Both sexes took part in the work but the female was more actively engaged. We failed to notice how much time was spent in nest repairing, but this pair in preparing for the second brood, spent one day in that activity,

doing somewhat less work on the nest than at the beginning of the season, although for the second time new material was built into the rim and the lining was again replaced.

On May 20, at dusk, male and female were seen sitting side by side upon a completed nest. On May 23, egg laying began, the clutch being completed with the fifth egg on May 27. Incubation began on the 26th. On May 30, we found the eggs cold and felt that disaster had overtaken the first nesting, but at nightfall the female was again seen on the nest and incubation continued. During this period the male spent the nights perching beside his mate on the nest and when the young had grown to fill the nest, he changed to the older nest adjoining.

We watched the behavior of both male and female during the incubation period. The female left the nest for food and rest at rather irregular intervals for the most part, although there may be the suggestion of a schedule in the fact that on three days she left between 12.01 and 12.25 P. M.; on two days between 10.43 and 10.50 A. M., and also on two days absence was noted between 2.15 and 2.20 P. M. That feeding periods were frequent during part of the time is indicated by the absence of the bird on three occasions within an hour. Absences were short, however, one of those just mentioned, consumed eight minutes while the longest recorded occupied but twenty-six.

Sometimes the male would come through the window which afforded access to the nest, and, calling to his mate would approach. The female would answer, and, leaving the nest would pass through the usual means of exit, the male meantime assuming the vacant place on the eggs. There he would remain until his mate returned when he would yield his place to her. Many times, however, the female would leave without any interposition of the male.

Incubation required fifteen days, although with both broods, sitting began before completion of the clutch, so that for the first clutch of five eggs sixteen days were spent in sitting, while for the second clutch of four, seventeen were consumed.

There was frequent rolling of the eggs by the female and this was always done upon her return even though only a short time had elapsed since a previous return. On one occasion a movement on my part frightened the bird just after she had settled, causing

her to leave again and upon her return, two minutes later, she again went through the process of turning the eggs.

Three young of the first brood hatched on June 11, and the remaining two on the following day. Their development was watched and notes made, these later being compared with similar observations of the second brood. Measurements of young birds are made with difficulty because of their ceaseless movements but extreme care was exercised and these are at least approximately correct. On the first day the young varied in length from 35 to 37 millimeters. The tarsus averaged three millimeters. The daily rate of gain in length ranged from two to ten millimeters. The maximum growth in length did not occur at the same age period for individuals of the same brood. Minimum daily increase in length showed the same lack of uniformity. There was an appreciable difference in the daily amount of gain in length during the first ten days of life in comparison with the succeeding eight, the usual gain during the first period being seven or eight millimeters a day while for the later interval, a gain of five millimeters was the daily average. The tarsus reached maximum length on the 13th day and a decidedly slower rate of growth was noted after the 9th or 10th day. The primaries appeared on the 5th day as follicles, two millimeters in length. The daily rate of growth of these was subject to much variation and showed no tendency to uniformity at the same age period among the different individuals of the same brood. A day's increase in length of the primaries varied from two to ten millimeters and the rate of growth was more rapid from the 7th day. The vanes of these emerged from their sheaths on the 9th day. The rectrices appeared on the 6th day and the webs of the rectrices emerged on the 9th day. Their growth was slower and less regular than that of the primaries.

Some changes in color affecting both the plumage and the soft parts were observed during the time spent by the young in the nest. Comparison was made with the plates in Ridgway's 'Color Standards and Color Nomenclature' and the terms used in the following description are from that work. The natal down was pale smoke gray and the bill on the first day was chamois shading to cream. On the second day a darkening of the skin on the dorsal, femoral, and alar tracts was noted and by the third day this in-

cluded all tracts but was less apparent in the capital and crural and almost imperceptible in the ventral. On the 4th day a darkening of the bill was observed and this became more pronounced on the 5th. At 12 days of age the feathers of the back which had been very dark, began to assume a greenish tint and at 15 days this had become markedly so. Just before the departure of the fledglings when 18 days old, plumage was noted and measurements made, these being as follows: Above, dusky gray green. Tail, olivaceous black. Throat, army brown. Breast, vinaceous buff. Bill, clove brown except the commissure which was yellowish. The length was 135 millimeters; the tarsus 11 mm., and the tail $38\frac{1}{2}$ mm. This compares with the measurements given in Ridgway's 'Birds of North and Middle America' as follows: average length of males, 166.8 mm., of females, 155.5 mm.; of tarsus 10.5 mm. in males, 11 mm. in females; of tail 89.1 in males and 76.4 in females. The discrepancies seem to be accounted for by the undeveloped tails of the fledglings.

Bands were attached when the oldest birds were 14 days old. Twenty-four hours after attachment one band was highly stained a light pinkish from contact with the feathers of the breast.

Among other developments observed was the opening of the eyes, a gradual process, beginning on the 5th day and being completed on the 8th. The use of the wings progressed from their being fluttered on the 9th day to short flights when removed from the nest on the 15th, although even on the latter date dependence was still largely placed upon crawling and hiding as a means of escape. Fear first became manifest at nine days of age, when, at the alarm note of a parent the young would retreat from the rim of the nest and crouch down in the bottom. When twelve days old they would shrink away if an attempt to handle them was made.

External parasites began to infest the second brood on the 9th day and they multiplied rapidly during the succeeding three days. On the 12th day numerous abrasions of the skin, evidently caused by the parasites, appeared on the head of the oldest and we feared that the whole brood were doomed but on the 13th a marked decrease in the infestation was noticeable and the injuries were healing.

Intermittent observations of the care of the young while in the

nest were carried on. When eight days old they were watched for one hour in mid-afternoon. During that time twenty-four visits were made by the parents with food. Because the differences in coloring between the sexes were so slight, it was not always possible to determine the sex identity of the parent, but the cases in which it was, indicated that the number of visits made by each was nearly equal. Once during the period, the female brooded the young for eighteen minutes. She also removed most of the capsules. Two days later the nest was watched for forty-five minutes in mid-forenoon. Forty visits with food were noted, probably fifteen of these by the male and twenty-five by the female although in seven instances the identity of the parent was somewhat in doubt. The parents would alternate in feeding for varying periods but more often one would be absent for a longer or shorter interval. The male was observed to have more of these absences and to stay away longer. During these, feeding continued by the remaining parent and was carried out at frequent intervals, the longest time noted between feedings being only four minutes.

The parents took advantage of every minute of daylight to secure food. They ceased from activity at 7.47 P. M. on June 21, when it was so dark that they had great difficulty in reaching the nest.

The first brood left the nest on June 29 and 30, five in number. The period spent in the nest was eighteen days for each of the first brood and this was true of the second with the exception of the youngest, for which the period was seventeen days. In both cases those individuals which hatched later than their companions had their nest leaving correspondingly delayed.

Inspection of an adjoining building for the purpose of selecting a nesting site by a pair of Barn Swallows was noted on July 10. A banded young bird of this brood had been seen on the shed roof on July 6. On the 11th, two adult Barn Swallows accompanied by four young were flying around the spring from which nesting material had previously been obtained. The adult birds were seen to be collecting mud and bits of straw, alighting for that purpose although their movements on the ground were most awkward. Meantime the young were flying about teasing for food. They circled around their parents repeatedly, often crossing the line of

flight of the adults when moving to and from the nest, seriously impeding the latter in their work. At last, the adults left off nest-building, apparently because of the annoyance of the young. Despite this persistent begging, no feeding of the young by the adults was seen. The identity of this family as the one which had occupied the loft was established by the sight of bands on two of the young. After this date the latter were not seen.

Evidently search for a new location for the second nesting had been unavailing, for the old nest was repaired and preparations for the second brood proceeded rapidly. The first egg was laid on July 16, and the clutch was completed on the 19th with the fourth. Incubation began with the laying of the second egg. Two of the eggs hatched on August 1, the third on the 2nd, and the fourth on the 3rd. The young left on August 19 and 20, four in number. No banded young were recognized after August 22, and none, young or adult, frequented the area after the 26th. On August 21, the four young of the second brood were seen on an eave spout in company with two other juvenile birds. The latter were more mature and might have been first brood young. Their behavior differed from that of the four as they did not assume an expectant manner upon the approach of the adults as the younger members of the group did. We were unable to detect bands on either of the two but it is difficult to do so in the case of a swallow. On the 25th of August six were seen flying about but as they did not alight, no opportunity for detecting presence or absence of bands or for determining age was afforded.

Much remains to be learned, especially about the behavior of the family after leaving the nest. One experiences great difficulty in following the fortunes of a family because of the practical impossibility of capturing the birds during the period immediately following nest leaving and frequent inability to detect bands. Further study may evolve means of solving some of these difficulties and the possibilities of future returns present an attractive prospect. Observations of this kind may in time become as complicated as researches in genealogy. That they are interesting can not be doubted and they possess the additional advantage of no family skeleton to discover and carefully put away.

Wells River, Vermont.

THE VOICE OF THE GOLDEN PLOVER.

BY CHARLES A. URNER.

THE numbers of Golden Plover (*Pluvialis dominica dominica*), stopping during migration on the salt marsh between Newark and Elizabeth, N. J., were larger during late September, 1930, than for many years. At the height of the wave, on the evening of September 27, fully one hundred and fifty of these birds were counted as they settled upon the dry fill to spend the night. In former years, before any of the marsh had been filled by dredgings from Newark Bay, the birds divided their time between the mud flats, when exposed, and the areas of burnt meadow prepared for them by hunters. They had a strong preference then for the burnt meadow but in recent years they have shown a decided liking for wide stretches of bare fill, where they rest by day, feeding part of the time on the bay mud flats which are uncovered at low tide, and spending the nights on the portion of the fill more or less overgrown with low vegetation, six to twelve inches high, which probably offers them some protection.

With so many of the birds about, unusual opportunity was offered for a study of their notes under varying conditions—on the ground; when taking wing, both disturbed and undisturbed; when flying about; and when coming in and decoying to birds on the ground. Some opportunity also presented itself for comparing the notes uttered by single birds and by those associated in small groups, or in relatively large flocks. Since I saw no flocks passing in migration I could not identify the calls then used.

Flocks resting by day upon the bare fill where they spent considerable time were very silent; but there was usually considerable calling as flocks came in, and more calling early in the morning and in the evening than during the remainder of the day.

The Golden Plover has a very flexible voice, and the extent of its "vocabulary" is much greater than one would infer from occasional meetings with only a few birds. Most of the notes heard were pleasing to the ear, though there was every gradation from a clear whistle to notes of unpleasantly harsh quality. The majority of the whistled notes had a little more twang than the notes of

either the Yellow-legs or Black-bellied Plover. In addition to considerable variation in clearness of tone there was also variation in pitch, the same basic call at times being uttered apparently in different keys and with different note relationships. There was also much variation in volume, some calls being startling in their loudness, while others were very subdued. The calls as flying birds joined those on the ground had a variability at times suggestive of conversation. However, in spite of this range of notes and note qualities, the majority of the more frequent calls heard were to my ear, in part at least, describable by the syllable "*que*"; and of them all the note best reproduced by attempting to say "*que*" with the tongue as you whistle it, was the most frequent, much more frequent in fact than the "*queedle*," as the Golden Plover note has been frequently described.

I appreciate fully the impossibility of reproducing accurately a bird's notes by written syllables, but such symbols, while imperfect, were the only ones I had available, and in an effort to codify the calls heard I attempted, on several different days thus to write them down. On each occasion I started with a clean pad and an open mind and recorded the calls heard under varying conditions. Then the records of all trips were combined. The result was a set of single calls and grouped calls more or less different,—enough so, I thought, to justify separate notation. Of the calls listed nineteen were uttered as birds were flying about or coming in to birds on the ground, fourteen when birds were on the ground, ten as birds were alighting and seven as birds took to the air. A few calls were heard under all these conditions, but some seemed peculiar to more definite situations.

The notes uttered by birds on the ground were, unless they were disturbed or were calling to passing flocks, mostly rather soft. The loudest notes were from birds thoroughly alarmed, though birds decoying sometimes called quite loudly.

I was not certain of any definite difference in calls of single birds and birds in flocks though the single birds, on the average, seemed to call more frequently and louder than the individual in a flock. But when a flock came in high and decoyed to birds on the ground every bird in the air was apparently calling.

I list here the calls heard with indication of when used. To one

who has never heard the Golden Plover the descriptions will not be very illuminating, though if one attempts to say with the tongue each syllable while whistling it the result may be an approximation. The birds decoyed rather readily in the evening to the softly whistled "*que*" and "*que-del*," and it was in the evening, when the birds were circling about the caller, looking the ground over before alighting, that one could best appreciate the tremendous speed they can attain in flight. They simply flashed by. I roughly timed flocks several times around a circle the circumference of which I later attempted to compute by noting objects passed and measuring the diameter. If my figures were reasonably accurate a speed of over one and one half miles a minute was at times indicated.

Since the Golden Plover, when most abundant, did not associate closely with other shore birds while on the field there was little danger of confusion.

It is interesting, in considering the following list of calls, to compare the syllables used to describe them with those used by others who have similarly sought to describe the notes of this bird. This I have attempted to do with the assistance of Mr. J. T. Nichols who compared the notes with those in his journals. Mr. Nichols had previously described several notes of the Pacific Golden Plover on its nesting grounds and has also heard and described several of the notes of the Eastern bird.

Attention is called to the different consonants used by different recorders in describing the same calls. This irregularity frequently occurs and proves the inexactness of thus attempting bird note descriptions. I found myself using different initial letters on different days for calls that were doubtless identical. The greatest utility of the syllable method of expression is the suggestion it gives of the number of parts or divisions in each call and their relation.

The notes heard were as follows:

(1) *Que*. Most frequent. Variable in volume, clearness and pitch, but often rather high pitched. When heard: (a) flock coming in high, rather questioningly; (b) single bird coming in low; (c) flock on ground; (d) as flushed, not much disturbed; (e) flying about.

Mr. Nichols suggests that this may be the usual flight note which he has described as "*quee-i-i-a* with a quaver in the middle," shortened down. He finds a similar abbreviation of the flight notes of Semipalmated and Least Sandpipers.

(2) *Que-del*. Frequent. Variable in loudness, tone quality, modulation and relative pitch of the two notes. Sometimes both parts of the call were of about the same pitch; sometimes the second was lower, and sometimes higher than first. When heard: (a) harsh, coming in to birds on ground; also clear with second note the higher; (b) loud, as the bird was disturbed, flushed, but lit again; (c) startled, loud, second note lower; (d) flying about, variable.

No. 1 I consider an abbreviation of No. 2. And No. 2 I suspect corresponds to the note C. W. Townsend has described as "*a queedle*," that Geo. H. Mackay has written as a "*whistled coodle*," and Ludlow Griscom as a "*harsh queedle*." To me there seemed usually enough break in the call to warrant the hyphen.

(3) *Que-del-eee*. Rather frequent. Also variable and usually merely an extra syllable variation or elaboration of No. 2. When heard: (a) As birds were flying about or coming in to those on ground, high pitched, loud and fairly clear and oft repeated; also a sweeter note with a flutter in it which I described by the same syllables or *que-del-e* (this might be a variation of Mr. Nichol's *que-i-i-a* flight note); (b) about to alight or just after alighting (I described this on different days also as *whee-del-eee* and *que-del-de-de*), uttered softly, short and very fast; (c) while on the ground; (d) startled, the last syllable loud and in ascending scale. I heard once what might have been the last syllable of this call uttered alone. I described it as "*a quirky que on an ascending scale*."

(4) *Que-de'-ul*, or *que-que'-que*, or *whee-de'-le*, oft repeated, often 10 times (three descriptions of what was doubtless the same note). Not infrequent when flocks are large. Clearly whistled and quite similar in character to that Greater Yellow-legs' call which J. T. Nichols has described as a "*yodel*"; however not so loud and full. When heard: (a) flock coming in and singles coming in; (b) alighting. A possible abbreviation or variation of this call is a *quede'*, *quede'*, *quede'*, etc., uttered many times, soft, short and very fast on ground just after landing. The *que-de'-ul* note, Mr. Nichols

suggests, may correspond to one of the calls of Pacific Golden Plover, heard on the breeding grounds, which he described as "a somewhat Whip-poor-will like *pterweeu*, *pterweeu*, *pterwit* or *peeperwip*, *peeperweeu*, *peeperwip* when two birds alighted together. There was a suggestion of Whip-poor-will quality in my No. 4.

(5) *Que-cer-a-wee* and *Que-cer-cerie* and *Que-to-cer-a-wee* or *Que-to-tor-a-wee*. Occasional. When heard: 1st, clear and sweet, oft repeated, as birds were flying about or coming in; 2nd, softly uttered as birds were leaving ground undisturbed; 3rd, uttered both softly and loud by birds in the air. This call Mr. Nichols compares with a Pacific Golden Plover note, a "long drawn, sweet *pee-er-wee*, *pee-er-wee*, the form rather that of the Black-bellied Plover though the tone that of the Golden." This seems to me correct, for I recognized the suggestion of the Black-bellied Plover when I wrote the "*tor-a-wee*."

(6) *Cer-eee-del*. Last note lowest, as bird was coming in high. A possible variation, a call I wrote *que-quee-que*, the first two higher pitched and loud and the third lower, uttered while circling. And I might also group here a *que-del-del-del*, soft, as bird was flushed at dusk; in this call also the difference in pitch, but only the first note high and the other three lower and of the same pitch. Also written *spe-spa-spa-spa*.

(7) *Que'-que-que* or rarely a single *que*. This is a clearly whistled note, reminding a little of the Yellow-legs' whistle, but usually on a descending scale. Heard from birds in air flying over or coming in. This is probably the previously described *too-lee-e* of E. W. Nelson. Mr. Nichols has a description of a call from a single bird September 14, 1930 which he expresses as *tēē lē lu* and *tēē lē lē* which may be comparable. I heard a soft variation which I described as *queep-que* and *queep-que-que* uttered when taking wing on own accord. Also a single whistled Yellow-leg-like *whew* as flushed in dark.

(8) *Pip* or *pit* or *que-tit*. Not infrequent. The short note sometimes of almost insect like quality, heard (a) as birds were coming in but (b) usually when on ground and once heard before dawn, (another variation *quit-a-weet*) (c) *que-pip*, loud as flushed. A call probably related to the monosyllabic *pit*, was a *cheep* or *queep* or *queet*, uttered on ground at attention as I approached; also a *sweep*, soft, when alighting. Mr. Nichols likens the *cheep* to an

alarm *peep* frequently heard on approaching the nesting Pacific Golden Plover. Other monosyllabic notes were: a *quert*, heard as flushed, but usually on the ground, and a clear *quip*, also heard on the ground.

(9) *Queel-que-queel* (rather loud) and *queel-queel-queel-que-del* (very loud), as the bird flushed, apparently much agitated. I had heard this call before.

(10) *Te-de-del* and *te-eee*, single notes, on ground, conversational.

(11) *Doo-del*, oft repeated.

(12) *Cip-cip-cip-cip-cer-ee*. Both No. 11 and 12 uttered as others came in by birds on ground.

(13) *Queel-que-que que-que-que-queee*, soft, when alighting; also *que-que-que-queee*, soft, while circling to alight.

(14) Note very like that of Semipalmated Plover, but sometimes with extra syllable. Heard (a) when flushed, and (b) when coming in, or over, or while swinging. Mr. Nichols has mentioned this similarity to the Semipalmated Plover note. He has written it as *tdlu-eeep* (Pacific Golden Plover) and *Kleep* (Golden Plover).

(15) A squeal, while circling in flock (one of the listed local names for Golden Plover by Forbush is "Squealer"). There was also a *spee* or *speea*, hoarse, while circling; another written as *queeer*, loud, harsh, while swinging.

(16) *Queel*, a sudden explosive note, differing from the *queel* in No. 9, ending very abruptly. Bird probably in the air circling.

(17) *Pé weee*. In flock at dawn.

(18) A note reminding a little of the call of the American Toad. Heard only once.

(19) *Que-ul*. Soft, questioningly while circling. Differing from the soft, questioning "*que-del*."

(20) *Que-que-que-que* (many times). A beady, very fast, soft whistle.

In the above list it is very probable that the same calls heard at different times have been differently expressed in syllables. But the effort to describe the calls heard will at least indicate the ability of the Golden Plover to develop a language of its own rather more extended, judging from my observations, than found in any of the other shorebirds with which I am acquainted.

Elizabeth, N. J.

GENERAL NOTES.

Leach's Petrel (*Oceanodroma leucorhoa leucorhoa*) Breeding in Massachusetts.—For four years beginning with 1930 those who have visited Penikese Island at the mouth of Buzzard's Bay, Massachusetts, for the purpose of banding terns have heard strange nocturnal noises which until this year remained unidentified. The banders—Dr. Winsor M. Tyler, Mr. Laurence B. Fletcher, Mr. Charles B. Floyd, and others—made some effort to discover the source of the mysterious sounds, but their self-imposed duties prohibited a systematic investigation. F. H. Allen visited the island July 28–30, 1932, with Mr. Elliott B. Church. The banding had then been completed for that year, and their visit was for purposes of general observation. Shortly before starting Allen had for the first time learned of the noises, and Dr. Tyler's description had suggested Leach's Petrel to him, but when he heard them himself, they proved to be not so loud as he had expected from his imperfect recollection of Petrel notes heard some years before under adverse conditions on Matinicus Rock, Maine. This, together with the facts (1) that the noises appeared to come only from the ground, (2) that cottontail rabbits, raised there by the State Division of Fisheries and Game, swarmed all over the island and were seen at night in numbers about the shed used as a dormitory, (3) that the noises were heard to issue from a hole in the rocks at the foot of a retaining wall into which rabbits were seen to disappear on several occasions in the daytime, (4) that no burrows such as Petrels ordinarily nest in were found, and (5) that the known breeding-range of Leach's Petrel extended no farther south than Matinicus Rock, 175 miles to the north-northeast, made it seem more probable that the rabbits were the authors of these not very birdlike sounds—and this in spite of the fact that no vocal utterances could be found recorded for the cottontail rabbit except screams of pain and fear. In this hypothesis Dr. Tyler was inclined to agree, and after visiting Penikese again for the banding in July, 1933, he came back strengthened in the belief that the sounds were probably made by rabbits. We have gone at some length into these earlier, and, as it proved, erroneous conclusions in order to show how it was possible that so interesting a discovery as that of the breeding of Leach's Petrel in Massachusetts was so long delayed.

Townsend, when he heard the description of the notes given by Tyler and Allen in the autumn of 1932, became at once convinced that they were made by Leach's Petrel (see his note on the song, 'Auk,' XLI, 1924, pp. 148, 149), and we planned a visit to Penikese in 1933 for the express purpose of endeavoring to solve the problem. Accompanied by Allen's son, Robert H. Allen, of Cincinnati, we made the trip July 18–20, spending two nights on the island. The notes were heard from 2.00 till 3:45 A. M. (Eastern daylight-saving time) on the 19th and from 2:30 to nearly 4:00

A. M. on the 20th. Townsend recognized them as those of Leach's Petrel. Unfortunately the waning moon was too small to give any appreciable light, but on the first night both Francis and Robert Allen, on separate occasions, saw a single bird in the air. Though they saw no more than a flutter of wings, it was definitely determined that the notes came from the air, though from near the ground. On the second night Allen saw again a fluttering bird and heard a bird fly to the base of the retaining wall before mentioned, and then heard notes issue from a hole there while he stood in front with an electric torch directed into the orifice. These notes were of an entirely different character from the flight song and included a trill such as Townsend described in his note of 1924 (*loc. cit.*). Allen and his son sat down against the wall on either side of the hole, and presently a bird fluttered out between them and gave its song as it flew away.

Later, by daylight, we examined this hole and found the white of bird excrement on the stones inside. Though the arm could be thrust in for its full length, it was impossible to reach the nest, and as the retaining wall of large cut stone could not well be torn down, we were forced to wait till a suitable means of netting or trapping the bird could be found before getting a specimen or photograph to confirm the record. We feel, however, that our evidence of the breeding of Leach's Petrel at Penikese is conclusive as it stands.

An interesting fact in connection with these Penikese Leach's Petrels is that, so far as is yet known, they nest, not in burrows in the turf, as is customary with the species, but in crevices among the stones of a retaining wall. Bent in his 'Life Histories of North American Petrels, etc.' gives no account of any such nesting-site, the nearest approach to it being among tree roots on the edge of spruce woods on Seal Island, Nova Scotia.—CHARLES W. TOWNSEND, *Ipswich, Mass.*, and FRANCIS H. ALLEN, *Boston, Mass.*

Anhinga Nesting in Liberty Co., Ga.—On June 3, while visiting a pond in Liberty Co., Ga., Mr. Audley F. King showed us an Anhinga's nest containing six eggs. The nest was large and not more than five feet above the surface of the pond. One of the parent birds resumed incubation on our departure.—MRS. V. H. BASSETT, *1010 E. Pack Ave., Savannah, Ga.*

Spring Migration of the Great Blue Heron.—Mr. A. C. Bent in his 'Life Histories of North American Marsh Birds' (Bul. 135, p. 112) writes of the Great Blue Heron: "Its fall migration is particularly well marked. Many individuals migrate singly, as solitary birds are often seen, but flocks of a dozen or 20 birds are not uncommon. I have several times seen such flocks in the fall, but none in the spring." He apparently had no spring migration records from other observers and from a brief perusal of ornithological literature, it appears that flocks in the spring are very rare if not unknown.

On April 9 between 10 a. m. and noon, while studying food habits of

the brant on Great South Bay, Long Island, New York, the writer observed three flocks of migrating Great Blue Herons, numbering 42, 12, and 5 individuals. In each flock the birds flew in a straight line, single file, keeping very high and probably three fourths of a mile off the mainland shore, in an east-northeast direction. The three flocks appeared to follow approximately the same air line and flew at about the same elevation. In the evening of this day, on two different occasions, single individuals were observed closely following the coast, but traveling in the same general direction. However, as they were flying comparatively low and much slower, it could not be determined whether they were migrating or merely going to an accustomed feeding ground.

During this same day six flocks of brant and two flocks of scaups, numbering from 16 to 75 birds each, were seen migrating at very high elevations. The brant in one flock were honking loudly as they left the water. The birds circled several times over the water where they had been resting and rose higher and higher with each revolution. Finally, after reaching the desired elevation they headed northeast in a long and irregular line. Unlike the Canada Geese, there appeared to be no flock leader.

This was one of the few clear and calm days that occurred along the coast during last April. It apparently was a time of considerable migration as the 5,000 brant seen on the bay this day were nearly all gone two days later.—CLARENCE COTTAM, *U. S. Biological Survey*.

American Egret at Kingsville, Ontario.—A unique sight has been experienced by bird lovers at the Jack Miner Bird Sanctuary, and marshes in vicinity of Kingsville, Ontario, during the month of August when between 200 and 300 American Egrets have made their home in this vicinity. Heretofore during many years of observation we only have record of seeing two such birds which was in 1932.

Thus to see between 200 or 300 of these pure white angelic looking birds is a rare sight especially when they would fly with the blue sky in the background.—MANLY F. MINER, *Kingsville, Ontario*.

Louisiana Heron in Centre County, Pennsylvania.—On May 24, 1933, the same day that a hurricane struck Philadelphia, a strange heron appeared at Red Mill Pond, near Tusseyville, fifteen miles east of here. I first discovered the bird when I visited the pond about 9.30 A. M.; it was then feeding along the edge of the pond in strong light, so that I could inspect it at leisure, approaching within about fifty feet. On my return to State College I notified Dr. and Mrs. T. C. Benton, who came down about noontime, saw the bird, and checked my identification. I saw the bird again about four in the afternoon but the next day we could not find it.

The following markings were observed: deep slaty blue upper parts; pale brownish gray aigrettes; two string-like white plumes on the occiput; chin white; a narrow rufous line down the foreneck; breast and sides of

neck like upper parts; belly, sides, and under wing coverts white; form very slender; bill very long, decurved, and shading so gradually into the head that it was impossible to tell where the head ended and the bill began; bill yellowish at base and blackish at tip; legs dull greenish. On the other hand we could see neither white on the rump—which was covered by the aigrettes—nor chestnut in the wing.

On the basis of the above observations we identified the bird as a Louisiana Heron.—HASKELL B. CURRY, *State College, Pa.*

The Jabiru (*Jabiru mycteria*) in Western Guatemala.—On 22 May, 1933, while visiting the lagoon at Hacienda California, a ranch six miles inland from Ocos on the Pacific coast of Guatemala, I observed two *Jabirus* (*Jabiru mycteria*). As at that date the rains had hardly begun, this was the only body of fresh water in a considerable area, and as a result it was alive with waterfowl, Jacanas, Spoonbills, Tiger-Bitterns, Egrets, Cormorants, Anhingas, Ibises, Night Herons, etc. The *Jabirus* were first seen standing in the very midst of scores of Wood Ibises (*Mycteria americana*), so that attention was drawn at once to their superior size and the shapes of the bills could be compared directly. The bright red skin of the lower neck was likewise clearly visible. During the greater part of the afternoon the two birds stood motionless, apparently asleep; toward evening I approached for the purpose of making them fly. This caused all the birds on the lagoon to take fright and while the others soon settled again in the water or on trees, the Wood Ibises and the *Jabirus* mounted high into the air and there soared in great circles until it was almost dark. Even at some distance the latter were easily distinguishable from their companions by their larger size and their wholly white wings and tail.

The *Jabiru* is very rare in northern Central America; I have been able to find only one other record for Guatemala, that of Salvin and Godman at Huamuchal, a fishing village not many miles from Hacienda California (*Biologia Centrali-Americana*, III, 1901, p. 187).—H. G. DEIGNAN, *Washington, D. C.*

Roseate Spoonbills and White Pelicans in Brevard County, Florida.—On the afternoon of May 30, 1933, the writer accompanied by Mr. Charles Ross saw seventeen Roseate Spoonbills (*Ajaia ajaja*) on Merritt's Island, about five miles east of Wilson, near the Indian River Pelican Colony.

The Spoonbills were very wary, flying as we approached within a good hundred yards of them. They rose out of a small salt water pond and circled about in a very compact group several times, rising high above the ground, then they flew northward. The birds were counted several times.

While Mr. Ross and I were watching the Spoonbills ten White Pelicans (*Pelecanus erythrorhynchos*) flew over about thirty feet above our heads, flying east.—WRAY H. NICHOLSON, *Orlando, Florida.*

European Teal (*Nettion crecca*) on Long Island, New York.—

Early in the afternoon of December 30, 1932 at the east end of Hempstead Reservoir, we found, as usually of late, a fairly large assemblage of ducks and gulls. Farthest from us were many Blacks, a few Pintails and Widgeon and in the foreground about twenty teal, the latter up on the ice and perhaps not over 500 feet from us. Running our glasses over them we seemed to encounter simultaneously a bird which stood broadside to us and showed a broad light streak along the upper side—a conspicuous field-mark even at that distance and despite the relatively low visibility. A drake Green-winged Teal near it plainly showed his crescent in front of the wing; our bird though nearer showed no such character. As we watched it with rapidly mounting interest, it turned slowly around obligingly exposing its other side to our view and again we saw the conspicuous scapular stripe. Suspicions born at first glimpse were well founded—the bird was unquestionably a drake European Teal.

We continued to watch it for perhaps twenty minutes at almost every angle. The Green-wings near it gradually took wing and eventually the European bird left in company with a female teal of doubtful identity which had been associating with it on the ice. There seemed to be no sure method of distinguishing the European bird on the wing though curiously we shared a common impression that the bird's wing did in some degree differ from that of the Green-wing—seemingly in the amount of whitish coloration.

By January 15, 1933, the Green-wings had increased to upwards of forty and on that date Messrs. Farley, Herbert, Kassoy and Matuszewski found two drake European Teal. These two were present for weeks on the reservoir and were seen by everyone who went to the trouble to look for them. One bird remained until late in March.—JOHN AND RICHARD KUERZI, *New York City*.

Courtship of the Hooded Merganser (*Lophodytes cucullatus*).—On the afternoon of March 17, 1933—a warm, springlike day which had brought up the March migrants in goodly numbers—as we neared the west bank of the Ox-bow at Northampton, we glimpsed a flash of white close behind the bushes that grew on its verge. Wriggling forward on all fours, we perceived at very close range two male “Fan-crests” wooing one female. They did not see us, but as if suspicious of danger moved gradually away from the bank: the average distance at which we observed them was perhaps forty yards, and we both had eight-power binoculars. The two suitors were rushing about the female but not endeavoring to show their legs as the American Merganser displays them. The action seemed due to energy not ostentation. Three markings seemed especially to be shown off: the narrow white lines on the inner rear wing-feathers, shown by turning first one side of the tail and then the other toward the female, not by opening the wings; the bars at the side of the forebreast, to show which the bird half rose up, again turning his right and left aspects alternately towards her; and of course pre-eminently the gleaming, black-tipped

crest. This, though continuously spread, was apparently opened yet wider by a forward and downward jerk of the head, like the flirt of a fan. It was then displayed by a side-to-side motion of the head, during which it was tipped backwards; and as the bill was thus elevated, it opened. At first we guessed this was to show color in the mouth, but we could see none and presently realized it was done to emit sound, for as the crest bent back and touched the shoulders the upward-opened bill uttered a double note, *car-curr*, the *curr* thrice as long as the *car* and much lower in pitch, with a softer R-sound. This vibratory, reverberant love-song greatly resembled that which might be expected from some distant, unrecognizable frog.

No combativeness accompanied this rivalry, nor did the female react in any way. Her relation in space to one of the males seemed to determine which of the three display-actions he performed: there was no regular sequence, save within the crest-show and this show, culminating in the song, was the most frequent. The males paid no attention to each other; yet the presence of two was probably essential, as we frequently in the next three weeks saw pairs of Hooded Mergansers by themselves, but never a sign of courtship.—AARON C. BAGG, *Holyoke, Mass.*, and SAMUEL A. ELIOT, JR., *Smith College, Northampton, Mass.*

Turkey Vulture (*Cathartes aura septentrionalis*) at Chicago.—On the evening of June 21, 1933, I saw a pair of Turkey Buzzards circling over Chicago, coming from the southwest and flying towards the north, circling over Lincoln Park, until out of sight. This was the first time I have seen these birds over Chicago.—EUGENE R. PIKE, *6 N. Michigan Ave., Chicago.*

Partial albinism in *Cathartes aura septentrionalis*.—On July 16 more than seventy Turkey Vultures came to feast on a dead sheep near here. Among this number I saw one with the feathers of the outer third of both wings white. I managed to approach the bird fairly closely two or three times, so that I can be perfectly sure of its coloration.—GORDON W. JONES, *Wilderness, Virginia.*

Golden Eagle (*Aquila chrysaetos canadensis*) in Louisiana.—In 'The Auk,' for July, 1933, p. 355, Mr. Ernest G. Holt wonders at "the strange omission of the Golden Eagle from 'Birds of Louisiana' (Bull. 20, La. Dept. of Conservation, 1931)."

In my editing this book for the Department of Conservation, at their request, no actual record of Golden Eagles having been taken in the state of Louisiana could be substantiated.

The late Prof. Geo. E. Beyer in discussing this bird with me told me that he had never found a record of the Golden Eagle having been taken in the state. A bird he thought was the Golden Eagle proved on further investigation to be an immature Bald Eagle, and this is the case with every report of the Golden Eagle taken within Louisiana that has come to my attention.

Mr. Holt goes on to mention "Two mounted specimens in the Louisiana

State Museum, New Orleans, collected by Alfred M. Bailey at Avery Island." This is an instance of how unreliable the Louisiana Golden Eagle records are. I showed the nest to Mr. Bailey from which these young birds were taken, and my men cut the tree down for him. This nest had been occupied for fully thirty years by Bald Eagles, and Bald Eagles were in attendance when the tree was cut.

The similarity of the immature Bald Eagle and the Golden Eagle has caused many erroneous reports of the Golden Eagle in the Southern States.—E. A. McILHENNY, *Avery Island, La.*

***Pedioecetes phasianellus kennicottii* Revived.**—The Museum of Natural History, University of Iowa, contains a series of forty-seven specimens of *Pedioecetes phasianellus*. Six of these from Nebraska and South Dakota are definitely referable to *P. p. campestris*. Three from Elbert County, Colorado and Pincher Creek, Macleod County, Alberta are referable to *P. p. columbianus*, being grayer, less buffy, on the upper parts than *campestris*.

Fifteen adults and nineteen juveniles are referable to *P. p. phasianellus*, and were collected at Grand Rapids, Lake Winnepeg, two adults from Virginia, St. Louis County, Minnesota, are also typical *phasianellus*. The feathers of the back are a brownish-black, tipped with grayish-white; each feather is crossed with two or three bars of drab. The feathers of the rump are similar in coloration to those of the back but the grayish-white tip is somewhat wider. The entire tone of color of these birds is darker than that of *campestris*. In the latter the back is decidedly buffy; the rump and light mottling of the elongated tail feathers is likewise preponderantly buffy. The markings of the breast feathers of the Minnesota birds are the same as in the Grand Rapids specimens. Each feather is dark brown, margined with white, and with a hastate stripe of white in the middle. The pattern of the breast feathers of *campestris* is similar but with a greater amount of white both marginally and medially.

In two specimens from Ft. Rae, Great Slave Lake, Mackenzie, the breast feathers are dark brown with a narrow white margin, and a very small lanceolate streak of white. These two Mackenzie specimens are both adult males in fresh plumage and were collected by Frank Russell, No. 11069 was secured October 7, 1893, and No. 11068, October 4, 1893. Besides the difference in the color pattern of their breast feathers the back, rump, and elongated tail feathers are black. The general tone of color above is much darker than in specimens of *phasianellus* from Grand Rapids. The single very narrow cross-bar on each feather of the back is cinnamon in color.

Since Linnaeus based his name *phasianellus* upon Edwards' "Long-tailed Grouse from Hudson Bay" this must be retained for the specimens from Manitoba and St. Louis Co., Minn. Preble (N. A. Fauna, No. 27, p. 249) notes that the Mackenzie bird was first recorded by Richardson, who gave a description of a male killed at Great Slave Lake in November

(Fauna Boreali-Americana, II, p. 362, 1831) but did not distinguish it from *phasianellus*. Suckley, however, considered it different and named it *Pediocetes kennicottii* (Proc. Acad. Nat. Sci. Phila. (XIV) p. 362, 1861).

The writer appreciates that two specimens may hardly be considered as sufficient material on which to base a claim for the validity of *kennicottii* but the specimens under consideration seem sufficiently distinct to justify such recognition.—PHILIP A. DuMONT, *Des Moines, Iowa*.

Extralimital Records for Baird's Sandpiper.—Baird's Sandpiper (*Pisobia bairdi*) was first recorded from Africa by Harting¹ who identified a specimen of this American species in the collection of C. J. Andersson, taken at Walvisch Bay, Damaraland, on October 24, 1863. Hartert² gave consideration to this statement with various references to published notes on it, concluding that the record was valid. Selater³ however, believed the record erroneous and did not include this species in the African list.

In view of these conflicting opinions and of the fact that the African record has not been cited in the A. O. U. 'Check-List,' I have had some interest in locating the specimen in question to determine its identity. After some correspondence with Dr. Hartert and Mr. Selater it developed that the skin obtained by Andersson was in the Zoological Museum in Leningrad where it has been courteously examined for me by Dr. B. Stegmann. Under date of May 28, 1933, Dr. Stegmann writes that the bird is unquestionably Baird's Sandpiper.

The specimen, he states, is in worn plumage, the molt having just begun. It is labeled "♂ Walvisch Bay. October 24, 1863, Andersson." Reference to Harting's publication in 'The Ibis' for January, 1870, is also noted on the label. Dr. Stegmann adds that in the Zoological Museum there is another specimen taken north of the Anadyr River in June, so he concludes that the bird may breed in the Chuckche Peninsula.

There must be included also in the range of this species the specimen obtained by Nelson on Arakamachachi Island near St. Lawrence Bay, Siberia, and one obtained by the Webster-Harris Expedition on Barrington Island in the Galápagos.—ALEXANDER WETMORE, *U. S. National Museum, Washington, D. C.*

Breeding Range of Herring Gull Extended.—On June 9, while inspecting tern colonies on the Connecticut coast for the National Association of Audubon Societies, the writer, with Audubon warden Frank N. Banning, counted twenty-one nests of the Herring Gull (*Larus argentatus smithsonianus*) on Wicopesset Island. This island lies about one half mile off the eastern tip of Fisher's Island, within the boundaries of New York State. At this point Fisher's Island Sound and Block Island Sound converge. Nearly two acres in extent, the island is the property of the

¹ Ibis, 1870, pp. 151-152.

² Nov. Zool., vol. 23, April, 1916, p. 91.

³ Syst. Av. Aethiop., 1930, p. 130, footnote.

Fisher's Island Club, which has posted it against trespass. We found there also a colony of about 900 Common Terns (*Sterna h. hirundo*). Until the date of our visit we had not suspected that Herring Gulls were nesting along the coast this far to the westward.

In the 1880's, as a result of the wholesale destruction of sea birds for the millinery trade, the Herring Gull was making a last stand on a few scattered islands off the coast of Maine. There occurred in 1888 the only early record of this species nesting in Massachusetts (Auk, IX, p. 226). That this was very nearly a final and hopeless gesture may be seen in the fact that a quarter of a century was to pass before the Herring Gull again nested in Massachusetts. Under warden service first provided by the A. O. U. Protection Committee through the Thayer Fund, and continued for the past 29 years by the Audubon Association, the Herring Gull has greatly increased. In 1912 they again extended their breeding range southward, to the eastern shore of Marthas Vineyard, and in subsequent years other Massachusetts records were forthcoming, notably from Skiffs Island, off Marthas Vineyard, and Muskeget Island, off Nantucket. The present record is a further movement westward about 75 miles along the coast, and southward a scant two or three miles.

The terns on the island had established their nests towards the eastern end, away from the area occupied by the gulls. From a blind I watched them darting maliciously at the brooding gulls, and at each attack the larger birds, panting and restless in the midday heat, dodged and uttered low nasal protests. There were eggs in various stages of incubation in the nests of both species. One young gull had hatched such a short time before as to be still slightly moist. Most of the gull nests were placed in the midst of the beach pea (*Lathyrus maritimus*) that grows profusely over the interior of the island.

Some 300 Herring Gulls and a few Double-crested Cormorants (*Phalacrocorax a. auritus*) apparently use the island as a roost. The former were in first and second nuptial plumage, and had no obvious connection with the breeding gulls of the island.

Nine other breeding colonies of terns in the vicinity are guarded by the Audubon warden, and the total adult population of these colonies, together with that on Wicopeset, we estimated as 2250. Roseate Terns (*S. d. dougalli*) in small numbers were observed in two of these colonies.—ROBERT P. ALLEN, *National Association of Audubon Societies, 1775 Broadway, New York, N. Y.*

Little Gull again in Upper New York Bay.—Every year in April and early May passengers on the Staten Island ferryboats are favored with excellent views of numbers of Bonaparte's Gulls. The temptation to watch them through a field glass will be well repaid if no rarer bird appears. It may be recalled, however, that on May 6, 1929, I had the good fortune to notice an adult Little Gull (*Larus minutus*) in their company.

On May 7, 1933, at 3:45 P. M., I was again watching some seventy

Bonaparte's Gulls following the wake of a ferryboat passing between Governor's Island and Ellis Island in the upper harbor. Another small gull coming to join them attracted attention, and inspection with the glass showed it to be an adult Little Gull. It flew together with the Bonaparte's Gulls for a couple of minutes, and then departed in the direction of another passing boat. In addition to the pattern of the primaries, I noted this time the blackish under surface of its wings, with pale posterior border.

For several days thereafter I watched for this bird from ferryboats, without success. It was doubtless migrating northward with the Bonaparte's Gulls. That it was the same individual as the one observed four years ago may be questioned, yet I am inclined to think this to be the case.—JAMES P. CHAPIN, *American Museum of Natural History, New York.*

Migration of Brünnich's Murre along Shore.—We sometimes hear a good deal about the overland flights and inland incursions of Brünnich's Murre (*Uria l. lomvia*), but has anyone observed its more normal, marine migration? On April 2, 1933, I was on Plum Island, Mass., and noticed a flock of twenty-five to thirty Murres just outside the surf-line. The wind was strong from the east but the Murres were not heading towards it. They were broadside to the wind and waves, moving northward in a compact body, swimming, diving, and occasionally briefly flying. A few minutes later, a second flock of about the same size was observed to the southward, and afterwards, farther south, a third. All were progressing in the same manner, slowly, so that from being first seen on my right to vanishing on my left took them nearly half an hour, but steadily, despite a wind that was probably holding them closer to the shore-line than they liked. I am told it is most unusual to see such numbers of Murres massed together on this coast.—S. A. ELIOT, JR., *Smith College, Northampton, Mass.*

"*Nyctale fasciata*" of Bertoni.—A. de W. Bertoni described *Nyctale fasciata* in *Aves Nuevas del Paraguay*, 1901, p. 174, from Djaguarascapa, Alto Parana, Paraguay (ad. ♂, Coll. Bertoni, July 1891). Arribalzaga in *Anales Mus. Nac. Buenos Aires*, Vol. VII, 1902, pp. 379, 388, referred the name to the genus *Ciccaba*, and von Ihering in *Rev. Mus. Paulista*, Vol. VI, 1904, p. 336, synonymized it with *Ciccaba hylophila* (Temm.). Bertoni says the eye is blue, a character not found in the genus *Ciccaba*. In connection with his description he writes that his *Nyctale fasciata* has very loose plumage and may belong to the genus *Strix* (some species of which have blue eyes). Subsequently Cherrie and Reichenberger described *Strix chacoensis* (now *Strix rufipes chacoensis*) in *Amer. Mus. Novitat.*, No. 27, Dec. 28, 1921, p. 1, from Fort Wheeler, Paraguayan Chaco (ad. ♂ Coll. Sept. 28, 1916, G. K. Cherrie). The measurements and color details correspond well to those given in Bertoni's description. Therefore I believe that *Nyctale fasciata* is a prior name for *chacoensis*, and that Bertoni's is the first record for this owl. The name *fasciata* can not be used for it,

however, having previously been employed by Des Murs, a writer of the early 19th century, as *Ulula fasciata* in *Iconographie Ornithologique*, pl. 37, and text, a synonym of *Strix r. rufipes* (King).—LEON KELSO, *Washington, D. C.*

Indiana Specimen of Great Gray Owl.—A mounted specimen of the Great Gray Owl (*Scotioptex nebulosa nebulosa*) was, until a year ago, among the birds in the collection at the Children's Museum at Indianapolis as a loan, and I identified it while it was at the Museum. It was later withdrawn from the collection by the owner, Mrs. J. F. Warner, who sent it to Springport, Indiana. I have recently ascertained that it was collected in the state of Indiana by William C. White near Fowler, Benton County, in the winter of 1897 and was mounted by Mr. Beasley, a well known taxidermist of Lebanon, Indiana, and then presented to the late J. F. Warner.—S. E. PERKINS, III, *Indianapolis, Indiana*.

Long-eared and Short-eared Owls in Northwest Arkansas.—In studying records of northwest Arkansas birds I find that neither *Asio wilsonianus* nor *Asio flammeus flammeus* have hitherto been recorded as occurring within that section of the state.

In the collection of Dr. Albert Lano of Fayetteville, which I acquired upon his death, there was one specimen of each species, both collected at Fayetteville, Arkansas. The specimen of *Asio wilsonianus* was an adult female, collected February 16, 1915; that of *Asio f. flammeus* a male, collected December 28, 1921. Prior to his death Dr. Lano told me he considered *A. wilsonianus* a fairly common winter visitant in the Fayetteville area.

Both of these specimens are now in the collection of Dr. Louis B. Bishop, of Pasadena, California.—J. D. BLACK, *Museum of Birds and Mammals, University of Kansas, Lawrence, Kansas*.

An Albino Short-eared Owl (*Asio f. flammeus*).—On November 19, 1929, a fine albino Short-eared Owl was taken in Fairfield Township, near Hollow-way, Swift County, Minnesota, and sent to me. It was a female in good condition, although the stomach was empty, as is usually the case with owls when taken. It is a beautiful specimen, as perfect an albino as can be. A large Snowy Owl had been taken at the same place a week before. There had been cold weather with gales bringing much snow from the north, so the probability seems to be that also this white denizen of the prairies had come from farther north, which is all the more likely when we consider that in such a well-settled region so unusual a bird would have been seen before and attracted attention had it been a resident there.—C. W. G. EIFRIG, *1029 Monroe Ave., River Forest, Ill.*

An apparently Unnoticed Trait of Whip-poor-will.—Nearly every night during the summer months the Whip-poor-wills (*Antrostomus vociferus vociferus*), which are abundant here, come to our yard, where they flit about or call in the trees.

When they come in the yard, I notice a habit which I have not seen mentioned in any of the literature. Almost every night that they are present the birds from time to time alight on the bare spots near the foundations of the house, where they creep about over the red clay, and apparently pick up grit. (Upon investigation I found no ants or other insects on the ground.) Sometimes a bird will chuckle softly while doing this. Furthermore, on these occasions I have never seen them take dust baths.

This action of the birds is so common here that I thought it worthy of record.—GORDON W. JONES, *Wilderness, Virginia*.

A Male Kingfisher Incubating at Night.—Along the Rio Morja, a tributary of the Motagua in Guatemala, I found, in 1932, nests of three species of Kingfishers. The females of both the Amazon Kingfisher (*Chloroceryle amazona*) and the Green Kingfisher (*C. americana isthmica*) incubated during the night, but the males relieved them early in the morning and occupied the nest for the greater part of the day. The routine of the Ringed Kingfisher (*Megaceryle t. torquata*) was very different. The two sexes alternated in the burrow on a twenty-four hour basis, and nest relief occurred only once a day, at about 7 or 8 o'clock in the morning. Each of the mates incubated for a complete twenty-four hour period, with the exception of a brief recess during the afternoon, when the eggs were left unattended.—ALEXANDER F. SKUTCH, *Tecpam, Guatemala*.

Male Woodpeckers Incubating at Night.—In 1932, while studying the bird-life in the lower Motagua Valley in Guatemala, I watched two nests of the White-billed Pileated Woodpecker (*Ceophloeus lineatus similis*) and found that the males of both incubated during the night. Later I studied three nests of the Truxillo Woodpecker (*Centurus santacruzi pauper*) and learned that the males regularly incubate the eggs during the night, and also brood the nestlings until the latter are about three weeks old. The following year in the high mountains of Guatemala, I found a male Guatemalan Flicker (*Colaptes m. mexicanoides*) incubating during the night. A male Hairy Woodpecker (*Dryobates villosus sanctorum*) spent the night in an inaccessible nesting hole which evidently sheltered young nestlings. In the cases of the first three species, at least, the sexes alternate on the eggs during the day, the females generally arriving early in the morning to relieve their mates. I have watched only the last three excavate their nesting holes and found that both mates share the labor rather equally. In the limited amount of literature I have been able to examine, I have found no reference to male woodpeckers incubating at night. It would be interesting to have observations on species in other regions.—ALEXANDER F. SKUTCH, *Tecpam, Guatemala*.

Yellow-bellied Sapsucker Breeding in the Virginia Blue Ridge.—Three male Yellow-bellied Sapsuckers (*Sphyrapicus varius varius*) were seen in Amherst County, Virginia, on July 6, 1933, at altitudes ranging approximately from 3550 to 3700 feet. Most of the birds were in or near a

beautiful stand of sweet birch (*Betula lenta*) and sugar maple (*Acer saccharum*) on the west-facing slope of Cold Mt. The presence of the birds was first noted on hearing their tattoo, ending with the characteristic retardation. In thirty or more trips taken by the writers into the Blue Ridge and Alleghanies of the central-western part of the state, no summer occurrence of the Yellow-bellied Sapsucker had been noted. It is known to breed, of course, on White Top Mt. in Grayson County, about 150 miles southwest of here, at an altitude around 5000 feet.—RUSKIN S. FREER, Lynchburg, Va.

Prairie Horned Lark Summering in Lancaster County, Pa.—On June 8, 1933, I saw a pair of Prairie Horned Larks (*Otocoris alpestris praticola*) about four miles from Lititz, Lancaster Co., Pa. I was able to walk to within six feet of them and study them with 10 power Zeiss glasses before they flew. The pair seemed to be mated and I believe they must have nested although I was unable to find a nest.

On June 11, I visited the spot again and found no less than fifty of the birds. They were very tame and we approached to within ten feet of them. The line over the eye was pure white and the throat very white; they also seemed to carry their "horns" more erect than in the winter months.

This is, so far as I know, the first occurrence of Horned Larks in Lancaster County in summer.—BARTON L. SHARP, Lititz, Pa.

Prairie Horned Lark Breeding at Mt. Holly, N. J.—Last winter we had quite a number of Prairie Horned Larks on our golf links just outside of Mt. Holly, N. J., and they remained plentiful through the early spring. On May 14 there were some still present and on June 23 I saw six in the same neighborhood. On July 1, I saw two birds and on July 4, four. These were all of about the same size but one of them was feeding another, evidently a young bird, as it stood still and allowed the first individual to seek food for it. The birds seem to like the fairways and sand traps of the links and are very tame so that one may approach to within a few feet of them before they take wing. With the characteristic habit of the species they will soar high up in the air and come down again within a few feet of the spot where they had been. Their occurrence in June and July is unprecedented.—NELSON D. W. PUMYEA, Mt. Holly, N. J.

Nesting of the Prairie Horned Lark in Central Virginia.—For three or four years previous to 1931 the presence of the Prairie Horned Lark (*Otocoris alpestris praticola*) during the summer in the vicinity of Lynchburg had led me to believe that it was nesting here. It is a fairly common winter visitor. March 27, 1931, I saw a bird make two trips with nesting materials in the bill, and located the site that had apparently been selected for a nest. I did not return to the spot until April 10, when there were three eggs in the nest. On April 13, two of the eggs had hatched and the young appeared to be about two days old. The third egg never hatched.

On April 19 another visit was made to the nest, when it was found that feathers were rapidly replacing the dirty tan down covering the nestlings. On April 23, the nest was empty save for the sterile egg. There had been a severe storm on the preceding day, accompanied by unusually high winds, so it is probable that the young birds were destroyed.

This seems to establish the southernmost record for the breeding of the Prairie Horned Lark on the Atlantic slope.—RUSKIN R. FREER, *Lynchburg College, Lynchburg, Va.*

Barn Swallows Breeding on the Gulf Coast.—Several days prior to July 4, 1933, I was cruising with a party of friends along the Mississippi and Louisiana coasts. On Ship Island just opposite Biloxi, Miss., while visiting an old fort built by the Confederates in 1862 for the protection of Ship Island Channel, I found a considerable colony of Barn Swallows (*Hirundo erythrogaster*) nesting inside the fort. This massive structure was half in the water and half on land. It is in a perfect state of preservation, and the swallow nests were built on the inside of the masonry under the arches. I counted sixty-eight nests, all of which appeared to have young birds pretty well grown. The nests were too high to look into, but I could easily see the young in the nests as the old birds fed them. This is, I believe, the most southern record of the nesting of Barn Swallows.—E. A. McILHENNY, *Avery Island, La.*

A Late-nesting Colony of Cliff Swallows at Lexington, Virginia.—On July 4, 1933, I examined a small colony of a dozen nests of the Cliff Swallow (*Petrochelidon a. albifrons*) in a barn at Big Spring Pond, near Lexington, Virginia, and found that nesting operations were unusually late in spite of the fact that the season had been wet and mud plentiful. Of five nests examined, one had young, two had three eggs each, one had one egg, and one was barely begun. Most of the others probably had eggs as the birds were on the nests. The new nest consisted of only two rows of mud pellets, the upper row still wet. At least one pair of the birds was seen gathering mud. These nests are not built in the usual site under the eaves, although the barn is unpainted, but about ten feet from the ground on the sides of joists under the main floor and over an open driveway at the side of the barn. This is the only colony that I know of at present in Rockbridge County.—J. J. MURRAY, *Lexington, Virginia.*

Robins Nesting in Extreme Southern Louisiana.—On July 18, 1933, Mr. I. A. Martin of New Iberia, telephoned me of a Robin's nest, found there by Mr. Edgar Guilbeau.

Mr. Guilbeau took me to see the nest on which the female Robin was sitting on four eggs. The tree in which it was built, an unusually large live oak, is growing in the northeast corner of the grounds of Howe Institute, which is the corner on Iberia Street next to Railroad Avenue. The nest was on a horizontal limb about 20 ft. above the ground. Mr. Guilbeau pointed out to me two other nests in this same live oak in similar positions,

both of which had been built by the Robins, and in which broods had been raised—one of four early in April and one of two during the last days of May. The male bird was present with the two last hatched young, neither of which was yet fully grown.

This, I believe, is the farthest south nesting of the Robin in Louisiana so far recorded, and is only about eight miles in direct line from Vermilion Bay—an arm of the Gulf of Mexico.—E. A. McILHENNY, *Avery Island, La.*

Starlings Wintering in Central and Western Texas.—The Starling (*Sturnus v. vulgaris*) is the most recent addition to the list of birds of the Austin, Texas, region.

Last winter, during late November and December, migrating Starlings were observed at several stations in and near this city. None were known to remain in the immediate vicinity of Austin, but many wintered in the agricultural district about fifteen miles to the south, near Manchaca, Buda and Kyle, for they were observed in these localities during December and January.

On January 15, 1933, when a trip was made to Laredo, hundreds of Starlings were observed south of San Antonio in farmyards near Pearsall, Dilley, Millett and Cotulla.

Many flocks were recorded between Temple, Waco and Fort Worth, and occasional bands were observed farther north near Denton and Gainesville, Texas, and Ardmore, Oklahoma, on February 1 and 5, 1933. The Starlings were often accompanied by English Sparrows, Cowbirds, Brewer's and Rusty Blackbirds, occasionally by Western Meadowlarks and rarely by Eastern Meadowlarks.

On December 28, I received a Starling, in the flesh, from State Game Warden Ray E. Miller, who had collected it near Fort Stockton, Texas. This town is 400 miles west of Austin and about ten miles east of the 103d meridian.—GEORGE B. SAUNDERS, *Department of Zoology, University of Texas, Austin, Texas.*

Golden-winged Warbler Feeding on Larvae of *Talponia plummeriana*.—The following observation on the food habits of a Golden-winged Warbler (*Vermivora chrysoptera*), made in the vicinity of Port Tobacco (Charles Co.), Maryland on May 6, 1933, seems worthy of mention, inasmuch as little specific information on the dietary habits of this species has been recorded. About 1:30 we observed a single individual of this species actively feeding in a low shrubby growth of pawpaw (*Asimina triloba*), which was in full bloom at this date. Closer observation revealed that the bird was probing about inside the flowers, and apparently was getting some kind of larvae. Examination of the flowers revealed that they were infested with a small, brown-headed lepidopterous larva. Dissection of a large number of flowers indicated that the infestation was high, the majority of flowers having one larva, although in many cases two were present. Several infested flowers were collected for the purpose of rearing

the insects to the adult stage under laboratory conditions. The cycle was completed without difficulty, the adults emerging within twelve days. These were examined by Dr. Carl Heinrich of the U. S. National Museum and found to be *Talponia plummeriana* Busck, a small brightly colored Tortricid, the only known food plant of which is the pawpaw.—A. L. NELSON, *U. S. Biological Survey, Washington, D. C.*

Brewster's Warbler (*Vermivora leucobronchialis*) in Ashtabula County, Ohio.—During eight years of study of the breeding birds of Ashtabula County, Ohio, the Blue-winged Warbler (*Vermivora pinus*) was found to range from rare to abundant, but local, as a summer resident. Eight nests were found. The Golden-winged Warbler (*Vermivora chrysop-tera*) was found to be rather general but local and decidedly uncommon or rare. Three nesting records were obtained. Thus one would expect to find matings between the two species not uncommon.

On May 29, 1930, in southern Wayne Township, the writer found a nest with five eggs being incubated by a female Blue-winged Warbler. Returning the next day with Robert H. McCormick and Roscoe W. Franks, the eggs had hatched and the young were being fed by a male Golden-winged Warbler. Photos and movies were taken of the hybrid young being fed by both parents at the same time. The young were seen again after leaving the nest but it was impossible to determine anything as to the characteristics of their plumage.

Male Golden-winged and female Blue-winged Warblers were observed feeding hybrid young out of the nest in eastern Monroe Township, June 12, 1931, southern Wayne Township, June 18, 1931, eastern Andover Township, June 12, 1932 and west of Springboro, Crawford County, Pennsylvania, on May 31, 1931. No other mating possibilities have been recorded. Adult Brewster's Warblers were seen on fourteen occasions in the eastern half of the county. No evidence of the nesting of this hybrid was obtained, in fact the behavior of the individuals suggested in most cases that they were non-breeding birds.—LAWRENCE E. HICKS, *Department of Botany, Ohio State University, Columbus, Ohio.*

American Redstart Breeding in North Louisiana.—In the several publications on the birds of Louisiana, there is no record of the American Redstart (*Setophaga ruticilla*) breeding in the state although the presence of the bird in the breeding season has been observed.

I have made a special survey on the status of the species as a summer resident of north Louisiana during the breeding seasons of 1932 and 1933. I found, as Miss Dormon had reported, that it was present at Black Lake, Natchitoches Parish, throughout the summer of 1932. In this locality, I found it to be more or less common along the swamp land bordering the lake but did not find it in the hill section surrounding the locality. The females were more abundant than the males, such males as were found were usually in song. At Creston, which is in the above named locality, an

immature bird was observed being fed by an adult female, the male being present but not engaged in feeding the young. At Bienville the Redstart was found to be rather common during the summer of 1932. On June 10, 1932, in Saline swamp near Bienville, I observed a female carrying food.

While on an expedition south of Tallulah, Madison parish, during the month of June 1933, in company with Mr. George H. Lowery, I found Redstarts to be common over a tract of 86,000 acres of swamp land. On this expedition, Mr. Lowery and I covered about 45 miles on foot during the three days there and both male and female birds were found in abundance. It was present at Creston and Bienville during the summer of 1933 as it was in 1932.

From the above evidence of its presence during the breeding seasons of 1932 and 1933, it appears that we may conclude that the American Redstart is a regular breeder in north Louisiana.—JOHN S. CAMPBELL, *Bienville, Louisiana*.

Color of the Iris of Brewer's Blackbird.—In the neighborhood of Hayward, in the northwestern part of Wisconsin, in June 1927, I found Brewer's Blackbird (*Euphagus cyanocephalus*) rather common there locally. I took it for granted that the iris of the male is yellow, and that of the female brown. In 1929 I returned to this spot and determined to look into this question more closely. I took a number of Brewer's Blackbirds, old and young, and found that all old males had yellow irises, young males of the year brown, while of five females three had the iris brown and two yellow. The latter are evidently old females, because their plumage shows considerably more iridescence than that of the former three. This was true also in a number of other specimens we took, which passed into the possession of a friend and companion. The two high-colored females showed all signs of breeding, one even having a large egg in the ovary. It would, therefore, seem that the old males, including those of the previous year, have yellow irises, also some of the old females, while the young males and a majority of the females have brown irises.—C. W. G. EFRIG, 1029 Monroe Ave., River Forest, Ill.

Unusual Behavior of Female Summer Tanager.—On May 24, 1933, a female Summer Tanager (*Piranga rubra rubra*) spent a large portion of the day fighting its image in my office window, which is located on the second floor of Hughes Hall, facing the woods of the lower campus of Miami University, Oxford, O. It was identified by its peculiar call notes and was accompanied part of the time by a male, who apparently ignored the window.—A. LAURENCE CURL, *Quincy, Ohio*.

Pine Grosbeak Nesting in Connecticut.—For a period of two weeks beginning May 28 and ending June 11, 1933, a pair of Pine Grosbeaks (*Pinicola enucleator leucura*) was observed by Mr. Kingsley Birdsall around the grounds of his home on Drum Hill, Wilton, Connecticut. Identification can hardly be questioned, with reason, since the birds were

seen many times and the species is not one which is readily confused; besides, Mr. Birdsall is an experienced student of wild life in various parts of the country, accustomed to careful observation. Mrs. D. K. Birdsall, as well as others, who are interested in birds, watched the pair closely. They were singularly tame in the presence of humans, allowing the latter to approach within eight or ten feet; toward other birds, however, the male was extremely "bossy," not permitting any to come near the bird-bath while the female was using it. A nest was begun and completed, about fifteen feet from the ground, in a red cedar not far from the house. For some undetermined reason, however, about June 11 both birds abandoned it and disappeared. Whether or not the weather had any influence or not, it happens that the departure of the birds, accustomed usually to high altitudes and northern temperatures, coincided with a most abnormal heat wave of several days' duration. As far as I can discover from numerous sources, there is no record of this bird attempting to breed in Connecticut, or, possibly, in New England, save in the White Mountains of New Hampshire above 3,000 feet altitude. Winter visitations, of course, are not uncommon.—DEVERE ALLEN, *Willton, Conn.*

Apparent Range Extension of the Eastern Savannah Sparrow.—Recently two notes have appeared in 'The Auk' recording the Eastern Savannah Sparrow (*Passerculus sandwichensis savanna*) in West Virginia during the nesting season. Just how widely it ranges in the state has not, perhaps, been sufficiently emphasized.

During the summers of 1932 and 1933 I have spent much time in the northern West Virginia region, and points adjoining it and have noted the Savannah Sparrow in Ohio, Brooke, Marshall, Randolph, Preston, Tucker, Monongalia, Grant, and Mineral Counties in West Virginia, and from Garrett County, Maryland. It has also been reported from Upshur County, West Virginia.

So far as I know, no nest has yet been found, but I recently watched a pair of these birds in Canaan Valley, Tucker County, West Virginia, exhibiting every sign of alarm. Later a young bird was seen.—MAURICE BROOKS, *French Creek, W. Va.*

Gambel's Sparrow in Ohio.—During the period from May 2 to 11, 1933, twenty White-crowned Sparrows were either banded or collected, at my home near Leetonia, Columbiana County, Ohio. Each member of this group was carefully examined for white lores which resulted in the finding, on May 8, of a seemingly pure specimen of Gambel's Sparrow (*Zonotrichia leucophrys gambeli*). This bird was taken in a banding trap, together with four other White-crowns, and was sufficiently distinct for its separation to require only a desultory glance over the lot of captives.

In view of the rarity of this western variety so far east, this bird was not banded, but was collected, and its skin deposited in the Cleveland Museum of Natural History. My identification was verified by Mr. J. W. Aldrich

who, in his letter of June 7, advised that "this specimen has been compared with a large series of *gambeli* from Idaho and is just as typical of that form as the average of this series."

Apparently this constitutes the first noted appearance of this form in Ohio, but its occurrence was to be reasonably anticipated since a neighbor state, Michigan, up until May 12, 1929, boasted eleven records, representing six different years, and involving both migratory periods (Van Tyne, in *The Wilson Bulletin*, June, 1930, pp. 95-97).

During the past six years I have banded 92 White-crowned Sparrows, and this is the first *gambeli* which has been detected, though I had observed a couple of what I regarded as tendencies in their direction.

The bird was a male, in good flesh, and weighed 33.25 grams, which is above the average (29.01) taken from 36 *leucophrys* weighings obtained during both spring and fall, but chiefly the latter, and mainly immatures.—PAUL A. STEWART, *Leetonia, Ohio*.

Notes from the Coast of Connecticut.—As the guest of Dr. E. G. Rowland of Norwich and Mr. A. P. Brockway of Hadlyme—who, since the passing of J. N. Clark and J. H. Sage, best knows the birds of the southernmost part of the Connecticut Valley—I was taken on June 6, 1933, to Menunketesuck Point in Westbrook, a rocky islet connected to the sandy coast by tidal flats. Some of the birds we observed there were new to my hosts; others seem worth noting because of the late date.

Phalacrocorax a. auritus. DOUBLE-CRESTED CORMORANT.—One, on an out-lying rock.

Mergus serrator. RED-BREASTED MERGANSER.—Four, quite well inshore; one of them apparently a male, but in indistinct plumage.

Charadrius melodus. PIPING PLOVER.—One, behaving as if its mate were incubating, somewhere among the pebbles. Said to be very rare on this coast.

Charadrius semipalmatus. SEMIPALMATED PLOVER.—Eight.

Squatarola squatarola. BLACK-BREASTED PLOVER.—One.

Arenaria interpres morinella. RUDDY TURNSTONE.—Seven.

Calidris canutus rufus. AMERICAN KNOT.—Five or six, quite tame and approachable.

Pisobia fuscicollis. WHITE-RUMPED SANDPIPER.—One, studied at very close range, and also heard.

Pelidna alpina sakhulina. RED-BACKED SANDPIPER.—One, in striking spring plumage.

Limnodromus griseus. DOWITCHER.—One. This bird bathed and preened, in company with four Knots and two Turnstones, within a few feet of us. All its markings were scrutinized through 8-power binoculars, and accorded perfectly—especially the very scanty spotting of the underparts, and pale buff crissum—with Prof. Rowan's new "inland" subspecies, *hendersoni*.

Sterna h. hirundo. COMMON TERN.—A few pairs were breeding; Mr. Brockway found eggs.

Corvus ossifragus. FISH CROW.—One eating shellfish on the flats was swooped at and driven away by terns. Mr. Brockway said there used to be a nesting colony of Fish Crows to the east of here, but not in recent years.—S. A. ELIOT, JR., *Smith College, Northampton, Mass.*

Notes from the Connecticut Valley in Massachusetts.—*Colymbus grisegena holboellii*. HOLBOELL'S GREBE.—One in beautiful nuptial plumage was seen on the river at Smiths Ferry on the remarkably late date, May 24, 1933.

Nyroca americana. REDHEAD.—A pair spent April 13 on the Oxbow at Northampton, making our first twentieth-century record.

Charitonetta albeola. BUFFLEHEAD.—A male was on the Oxbow April 15.

Mergus serrator. RED-BREADED MERGANSER.—Two males were on the Oxbow, April 7–10. A female in poor-looking plumage was on the river-side "Sandy Beach" of Hadley, May 24.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.—One was noted in the western part of Northampton on May 13.

Thryothorus l. ludovicianus. CAROLINA WREN.—One, first noted by us on April 24 and for three weeks thereafter, but said by people living near it to have stayed from late March to late May, sang constantly in a certain thicket at Northampton.

Lanius ludovicianus migrans. MIGRANT SHRIKE.—One spent April 15 in a certain Northampton orchard.

Guiraca c. caerulea. BLUE GROSBREAK.—A female was observed with two male and one female Rose-breasted Grosbeaks at Northampton May 14, the day of a great spring "wave." On May 18, a male was seen at South Hadley.

Carduelis carduelis. EUROPEAN GOLDFINCH.—One was seen at Northampton on April 10. At the very place, there, where two spent April 26–May 4, 1932, a pair appeared again on April 30, 1933, and again one of them was banded. They did not stay.—AARON C. BAGG, *Holyoke, Mass.*, and S. A. ELIOT, JR., *Northampton, Mass.*

Notes from Jones Beach, N. Y.—The following data from the south shore of Long Island seem worthy of recording. Unless otherwise stated, the birds were observed by the writer at the Jones Beach State Bird Sanctuary.

Casmerodius a. egretta. AMERICAN EGRET.—Two birds of this species were first observed May 17, 1933, by Mrs. Carl Tucker and Drs. Elliot and Janvrin of New York City and Mr. James Terry, of Freeport, N. Y. One Egret was present, almost daily, until May 27.

Nettion crecca. EUROPEAN TEAL.—On April 9, 1933, the writer, in company with J. and R. Kuerzi, of New York, noted an apparently unusual amount of white in the wing of a flying Teal, in a flock of Green-wings. After the birds dropped onto the water, careful scrutiny resulted in identification of a male of this species. Several times the greater amount of

white was seen in the wings of a flying bird, but since it was impossible certainly to identify the flying individual with the swimming European Teal, the value of this area as a field mark in flight must remain merely suppositious. It seems probable that this individual was one of those that wintered at Hempstead Lake State Park.

Coturnicops noveboracensis. YELLOW RAIL.—One found dead, September 10, 1932, near the water tower, Jones Beach State Park.

Pisobia bairdi. BAIRD'S SANDPIPER.—This species observed September 5, 9, 16, 1932.

Erolia testacea. CURLEW SANDPIPER.—First noted, August 7, 1932, with a flock of Dowitchers, by Richard Herbert, of the Bronx County Bird Club; his attention was attracted by the broad white stripe in the rear edge of the wing. The bird, in virtually intact breeding plumage, was studied at leisure by several observers as it fed in deep water with Stilt Sandpipers. This is an early record for Long Island.

Limosa fedoa. MARBLED GODWIT.—Noted August 1, 1932, while in company with J. and R. Kuerzi. The bird permitted an approach within fifty feet.

Limosa haemastica. HUDSONIAN GODWIT.—This species seen in flight, but at close range in good light, May 22, 1932.

Steganopus tricolor. WILSON'S PHALAROPE.—A bird of this species was first noted at Gilgo Flats, August 28, 1932, by Mr. Frank E. Watson of the American Museum of Natural History, and members of the Woodmere Academy Bird Club, and seen the next day by many observers, including the writer.

Rynchops n. nigra. BLACK SKIMMER.—Three seen May 14; one on June 5 (with R. T. Peterson of Brookline, Mass.); two on September 7, near Gilgo Flats (Peterson); one juvenile, October 2, had been banded at Avalon, N. J., by J. A. Gillespie. All dates 1932.

Tyrannus verticalis. ARKANSAS KINGBIRD.—This bird, present for several hours on August 19, 1932, was observed by several people within 200 feet.

Mimus p. polyglottos. EASTERN MOCKINGBIRD.—This species present at the Sanctuary September 7, 9, 13, 21, 24, October 1, 2 (singing both days) 4, 15 (singing), 1932.

Oporornis agilis. CONNECTICUT WARBLER.—This species recorded at Jones Beach State Park, September 10, 30, October 7, 1932.

Xanthocephalus xanthocephalus. YELLOW-HEADED BLACKBIRD.—This bird was seen in the marshes at the east end of the Sanctuary pond on September 1, 1932, by Miss Helene Lunt, of the N. Y. Botanical Gardens. It was observed during an hour and so accurately described as to leave no doubt concerning its identification. A bird of this species, possibly the same individual, was present for some time near Bayside, N. Y., during the spring.

Chondestes g. grammacus. EASTERN LARK SPARROW.—On August 21,

1932, an individual of this species was momentarily though clearly seen, and the central breast spot and white in the tail observed; at such close range glasses were not necessary. The sparrow disappeared from a telephone wire into nearby bayberries and poison ivy, with a shrike-like swoop.—WILLIAM VOGT, *Jones Beach State Bird Sanctuary, Wantagh, N. Y.*

Notes from the Virginia Mountains.—*Falco peregrinus anatum*. DUCK HAWK.—On April 14, 1933, a companion and I found a pair of Duck Hawks nesting in a cliff at the top of Jump Mountain. We could not actually see the nest, as the cliff was inaccessible, but both adults flew out from the cliff, one of them, which we took to be the male, cackling harshly. They remained in sight for three hours, flying back and forth continuously. Once the bird which we took to be the female from her greater solicitude, flew near the cliff with a harsh squeal, and the loud "cheek-cheek-cheek" calls with which the young birds answered showed us the approximate location of the nest. This seems an early date for well grown young, but nothing else could have made the answering noise.

Falco c. columbarius. EASTERN PIGEON HAWK.—For several years I have looked for this bird in vain to finally see it at widely separated points on two successive days this spring, April 13 and 14, 1933. The second bird, a female, I was able to watch from the top of Jump Mountain for several minutes as it flew in bright sunlight below me almost around the peak. The dusky-brown back and tail and the moustache markings could easily be distinguished.

Larus delawarensis. RING-BILLED GULL.—I shot an adult female in winter plumage at Big Spring Pond, seven miles from Lexington, February 13, 1933. This is my only record here. It had previously been crippled and was very thin. Several times it lit in the snow on a nearby hillside.

Corvus corax principalis. NORTHERN RAVEN.—This great bird is still fairly common in Rockbridge County, occurring both in the Blue Ridge and in the spurs of the Alleghanies. I see it frequently, recent records being May 29, 1933, two seen on Thunder Hill in the Blue Ridge; and June 5, 1933, four seen near House Mountain. I estimate the raven population of the county at from twelve to twenty. I have never seen more than four at one time but have authentic reports of as many as seven or eight together. It nests annually somewhere near White Rock Mountain, as family groups always appear in May, but neither I nor the mountaineers whose coöperation I have enlisted have yet succeeded in finding a nest. The raven is a filthy feeder, often joining the vultures at the carcasses of sheep. On both of the occasions mentioned they were worrying Turkey Vultures. I have never actually seen them strike at a buzzard, but a mountaineer friend, who is a keen student of nature, tells me that he has seen them harry a Turkey Vulture until it disgorges its carrion food, which the raven then proceeds to follow to the ground and devour.—J. J. MURRAY, *Lexington Virginia*.

Summer Records from the Virginia Piedmont.—On two occasions this summer the Lesser Scaup Duck (*Nyroca affinis*) has been found at Timber Lake, a body of water of about seventy acres extent, located ten miles west of Lynchburg. On June 11, 1933, I saw a female, and on June 24, 1933, two males.

On June 12, 1933, we saw a Black-billed Cuckoo (*Coccyzus erythrophthalmus*) with one young bird, almost fully grown, on the campus of Lynchburg College, at an altitude of about 800 feet. This is only my third positive record for this bird for Lynchburg, the other two being of dead birds which had flown against windows apparently, one found in the fall of 1928, and the other this past spring.

A male Scarlet Tanager (*Piranga erythromelas*) has been singing daily and has been seen frequently in the campus woods of Lynchburg College at least up to the first week of July, 1933. The altitude here is only about 875 feet and the avifauna is decidedly Carolinian. A singing male was also found at Timber Lake, ten miles west, at the same altitude, on two dates, June 15 and 26, 1930. Except for these records the Scarlet Tanager has been found in this area only in the Blue Ridge about forty miles west, at altitudes from 1200 feet upwards, where it is fairly abundant as a summer resident.

The Eastern Vesper Sparrow (*Poocetes gramineus gramineus*) is abundant as a migrant in this area, and is a fairly common summer resident in the Valley of Virginia, but I have not found it in the summer until this year, when we found a singing male on June 24.—RUSKIN S. FREER, Lynchburg, Va.

Some Breeding Records for Ohio.—On June 16, 1933, Floyd B. Chapman and the writer added a new breeding bird to the list for north-eastern Ohio. A nest with three nearly fresh eggs of the Piping Plover (*Charadrius melodus*) was found on a broad sandy beach at Ashtabula, just west of the mouth of the Ashtabula River. As this locality is more than 100 miles east of the nearest known nesting place in Ohio, Cedar Point in Erie County, the set was collected for the Ohio State Museum. As all of the beaches in the county have been visited repeatedly during the nesting season since 1927, it is believed that the Piping Plover is a most recent addition to the breeding avifauna of the county.

Neither Wheaton, Jones, nor Dawson record the White-throated Sparrow (*Zonotrichia albicollis*) as a breeding species for Ohio. Kirtland mentioned that the species sometimes remains in northern Ohio throughout the month of June but no breeding records have been published.

In two localities of Ashtabula County the writer found White-throated Sparrows present during the summers of 1928, 1929, 1930 and 1932. Adults were seen feeding young a few days out of the nest in a swamp forest tract of southern Wayne township on July 6, 1928, July 16, 1929, and July 14, 1930, but diligent searching at earlier dates failed to disclose any nests. On June 14, 1932, however, a nest with three small young was

found in the Ohio portion of the Pymatuning Bog in eastern Andover Township. The nest was placed in a clump of shining club moss and American yew. On the following day, quite by accident, another nest with three nearly fresh eggs, was found in the same locality. This set was collected and is now to be found in the Ohio State Museum.

Neither Jones nor Dawson, in their volumes on the 'Birds of Ohio,' recorded the Slate-colored Junco (*Junco hyemalis hyemalis*) as a breeding species for Ohio nor does the fourth edition of the A. O. U. 'Check-List' include Ohio in the breeding range. Kirtland (1838), however, stated that the species "breeds in great numbers in the dark beech woods of the Connecticut Western Reserve." No other breeding references are known.

The writer has done extensive field work in all of the northern Ohio counties where the Junco could be suspected of breeding, and has come to the conclusion that the Ohio breeding range includes only the eastern half of Ashtabula County. Here the species was found breeding locally in twelve localities from 1928-1933. These were in Wayne, Andover, Richmond, Denmark and eastern Monroe townships.

Fourteen nests have been found in all and several young were collected for the Ohio State Museum. Only two or three pairs nested in the Ohio portion of the Pymatuning Swamp but a nesting census showed that no less than fifty pairs bred in eastern Monroe township until the drouth year of 1930. Since that time, with the water table much lowered, the number of pairs breeding appears to be considerably less. A number of pairs were also found breeding across the state line in the northeastern corner of Crawford County, Pennsylvania and in the Pennsylvania portion of the Pymatuning Swamp as also recorded by Sutton. All of the nests found were in the dark densely wooded wet beech flats, the principal woody plants being beech, red maple, yellow birch and hobblebush. Nests were usually placed in clumps of cinnamon fern or in little pockets on the slopes of mounds created by overturned trees. Materials used were mostly bark, sedge straws, rootlets, hair, mosses and rabbit fur.

The median date of departure of the Junco from the Columbus region is May 10, yet mating and nesting activities of some of the breeding birds in Ashtabula County (200 miles to the northeast) begin no less than three weeks earlier, as many young are out of the nest before June 1. From the known incubation period and rate of development of the nestlings, the calculated dates for full sets of eggs in the earlier nests found are as follows: 1928, May 5; 1929, May 2; 1930, May 4, May 1, April 28; 1931, May 3; 1932, May 5 and 1933, May 6. On May 30, 1930, four broods of young out of the nests and one nest of day old young, were found by Robert H. McCormick, Roscoe W. Franks and the writer in eastern Monroe Township.—LAWRENCE E. HICKS, *Department of Botany, Ohio State University, Columbus, Ohio.*

Notes from Eastern Kansas.—*Cygnus columbianus*. WHISTLING SWAN.—This formerly common bird is now very rarely seen here. A

female in the gray, immature, plumage was killed by a duck hunter at Lake View, Douglas County, on November 1, 1932, and brought to the museum. It was alone when killed.

Chen caerulescens. BLUE GOOSE.—This is another bird rare in Kansas. On April 9, 1933, Dr. E. H. Taylor found one dead near Clay Center, Clay County, while on a herpetological collecting trip with a party of students. It was badly decomposed, but the skeleton was saved.

Pandion haliaetus carolinensis. OSPREY.—A pair was seen fishing in the State Lake at Tonganoxie, Leavenworth County, by Dr. H. H. Lane of the Department of Zoology, University of Kansas on May 1, 1933.

Ionornis martinica. PURPLE GALLINULE.—A male of this species was taken alive near Clearwater, Sedgwick County, by Mr. Alvin Peterson, and sent to the museum on June 17, 1933. According to available records this is the fifth specimen recorded from the state. Three of these were from Douglas County, and one from Riley County. The latter is in the Blachly collection at Manhattan.

Bartramia longicauda. UPLAND PLOVER.—The writer took one of these birds in Douglas County, on April 17, 1933. The species is quite common on the high prairie country of the South and West where it breeds over extensive areas, but has not been taken in Douglas County since 1915.

Dendroica cerulea. CERULEAN WARBLER. There are only three Kansas specimens of this warbler in the museum here, one of which, a male, was taken by Fred Baumgartner, eight and one-half miles southwest of Lawrence, on April 29, 1933. The specimen was badly torn, but was saved by careful work and is now number 20033 in the Kansas University collection. Snow records it as a rare summer resident, but very few have been taken. Mr. G. C. Rinker, of Hamilton, has one in his collection of Greenwood County birds.

Dendroica fusca. BLACKBURNIAN WARBLER.—A specimen taken by the writer seven and one-half miles southwest of Lawrence, Douglas County, on May 21, 1932, is the second Kansas specimen in the Kansas University collection. Dr. Jean Linsdale took one in Geary, Doniphan County, September 3, 1923. Snow (1903) records it as migratory and rare, but the dearth of specimens indicates it is only of casual occurrence in the state.

Dolichonyx oryzivorus. BOBOLINK.—This bird occurs here very irregularly, but always in large flocks. The writer observed a flock of about seventy-five of these birds in an alfalfa field one mile southwest of Lawrence, from May 4 to 11, 1933, and collected a series for the museum. Only two females were seen in this flock of males.

I wish to thank Mr. C. D. Bunker for permission to submit these records.—W. S. LONG, *Museum of Birds and Mammals, Lawrence, Kansas*.

Records from the Dominican Republic.—Mr. George Hamor of Barahona, Dominican Republic, in two recent letters has supplied additional information on the range of the introduced Black and Yellow Mantled Weaverbird (*Texor cucullatus cucullatus*) that is of considerable

interest. In August, 1932, he found a colony of forty nests about twelve miles inland from Barahona at a locality known as Batey 1, on the holdings of the Barahona Company, Inc. In May, 1933, another colony of twenty-five nests was found in the same vicinity. In June three small groups were found in the Palo Alto section about five miles inland from the Bay of Neiba. This is the farthest east from which the bird has been recorded. It may be observed that this area is directly connected through a great valley with the Cul-de-Sac region of Haiti where this weaver is common.

This species has been reported previously from the Dominican Republic only near Comendador on the Haitian frontier where I found a colony in 1927.

Mr. Hamor writes also that on December 24, 1922, with a friend he shot ten Shovellers (*Spatula clypeata*) at Laguna de Caballero about three miles from Barahona. This bird has been reported previously, but somewhat uncertainly, in Haiti. It should be of fairly regular occurrence in migration.—ALEXANDER WETMORE, U. S. National Museum, Washington, D. C.

Birds Eating Sawfly Larvae.—A close watch was kept on an ash tree growing in the yard of my home in Washington, D. C., from May 16 through May 21, just past. The tree was observed from second-floor windows at distances varying from five to ten feet. A Red-eyed Vireo (*Vireo olivacea*) a rare visitor to the garden, had been seen in the tree on the morning of May 15, but when a pair was noted at work before 6.30 a. m. on May 16, the tree was inspected, and found to be heavily infested with the less than inch-long slender, white and pale green larvae of the ash sawfly (*Tomostethus multicinctus* Roh.). The birds were observed in the tree daily from sunrise until sunset through May 20. The vireos picked up the sawfly larvae near the centre, and after perching parallel to a branch or twig, with bill toward the tip, they would swing their heads back and forth battering the worm upon the twig. The larvae were beaten against the twig as many as eighteen times, then swallowed in three or four gulps and the bill wiped against the branch from four to eight times. One vireo took eight worms in three minutes and knocked two others to the ground. No sound accompanied these actions.

On May 16, about 7.15 a. m., a Magnolia Warbler (*Dendroica magnolia*) flew against two window panes in which the infested ash tree was reflected. After clinging momentarily to the brick wall beside the window, it flew into the tree, where it was seen to be eating the larvae until it disappeared about 9.00 a. m.

On May 17 a female Rose-breasted Grosbeak (*Hedymeles ludovicianus*) was noted feeding on the larvae several times, and was observed once on May 18.

A female English Sparrow (*Passer d. domesticus*) ate a few larvae on May 18.

Before sunrise on May 18, a pair of Catbirds (*Dumetella carolinensis*), nesting in the yard, discovered the sawfly infestation, and from then until

May 21 were noisily in evidence about the ash tree. Unlike the other species mentioned, the Catbirds "miaoued" over each capture. They picked up and swallowed the larvae in one motion.

A severe wind storm accompanied by rain at 6.30 p. m., May 20, removed the few remaining larvae from the ash tree much to the disgruntlement of the Catbirds.

In the course of examinations made by the Bureau of Biological Survey, U. S. Department of Agriculture no less than forty-seven species of birds have been found to have fed upon sawfly larvae and seven additional species are recorded in the literature. The larvae were found in the stomachs of 20 Chickadees, 12 English Sparrows, 8 Robins, 7 Yellow-billed Cuckoos, 8 Mockingbirds and less frequently in the other species.—PHOEBE KNAPPEN, *Washington, D. C.*

Some Bird Enemies of Odonata.—On May 23 and 24, myriads of dragon-flies were to be seen everywhere along the road and beach connecting Lynnhaven Inlet with Virginia Beach, Virginia. The largest and most numerous species was *Epiaschna heros*, which was being caught in the air as well as being picked up from the surface of the road by the Kingbird, Mockingbird, and Brown Thrasher, which also were present in unusual abundance. Two Fish Crows, a Long-billed Marsh Wren, and several Red-winged Blackbirds were observed to catch and eat this same large dragon-fly. Bluebirds and Cardinals were probably feeding on the Odonata.

On the ocean beach many of the dragon-flies were found dead and dying. Here Turnstones, Sanderlings, and Bonaparte's Gulls, observed through field glasses from a distance of thirty feet, appeared to be eating these insects. An examination of the dry sand where they had been feeding showed their footprints, no probing holes, and numerous remains of dismembered Odonata.—PHOEBE KNAPPEN, *Washington, D. C.*

Flight Speed of Some Birds.—The following speeds, in miles per hour, of various flying birds were determined by an automobile speedometer. The records are believed to be fairly accurate and have not been reported previously. The flight speeds were as follows, in miles per hour: Common Tern 13, Black Duck 26, Great Blue Heron 23, American Egret 17, Eastern Green Heron 22, American Woodcock 13, Mourning Dove 26, Turkey Vulture 15, Yellow-billed Cuckoo 22, Belted Kingfisher 17, Red-headed Woodpecker 22, Northern Flicker 23, Eastern Nighthawk 12, 17, 22, Eastern Kingbird 11, Starling 28, 35, Red-wing Blackbird 22, 23, 23, Eastern Meadowlark 15, 20, 20, Rusty Blackbird 19, 19, 20, 23, Purple Grackle 20, 20, 23, 24, 25, 25, 26, 28, English Sparrow 28, 35, Slate-colored Junco 18, Purple Martin 20, Barn Swallow 20, 20, Tree Swallow 25, Catbird 12, Brown Thrasher 19, 22, Eastern Robin 17, 20, 23, and Eastern Bluebird 13, 15, 26. Opportunity for measuring the flight speed does not come frequently. The bird must be close to the automobile and flying parallel with it. Factors which have an influence include the direction and

force of the wind. In none of the above records did the wind exert any influence. To what extent fright was a factor could not be determined. Both the Turkey Vulture and the Woodcock rose from roads boarded by dense woods and flew for a few hundred feet directly in front and close to my car. The varying speeds may suggest an accelerative action by the birds, some inaccuracy in reading the speedometer or slight wind influence.—HAROLD B. WOOD, M.D., *Harrisburg, Pa.*

A Suggestion for a Scientific Method of Studying Bird Sounds.—

The study of bird sounds seems to have lagged far behind other branches of ornithology. This may be due to the prevalent practice of following the line of least resistance and investigating fields that are not so difficult of approach. Bird sounds are not easy to study. No adequate system has been proposed that will enable one to convey to another person the salient features of a sound so it can be recognized. This suggestion has to do with the analysis of sounds from the standpoint of physics, and not with graphical or symbolical systems devised for ready field identification.

Saunders (*Auk*, XXXII, 1915, pp. 173-183) seems to have proposed the best method of field study, but it requires considerable training and above all a good musical sense. Furthermore it is subject to the limitations of the human ear. Brand (*Auk*, XLIX, 1932, pp. 436-439) has taken a step in the right direction in making a permanent record of the sound. Here again, since the ultimate analysis of the records depends on the ear, the accuracy will be limited.

Sound consists of vibrations in some medium, usually air. Its motion is simple harmonic and can be represented graphically as a sine curve. The intensity will be indicated by the amplitude of the curve, the pitch by the frequency or number of complete cycles per second, and the quality by the wave shape, the latter determined by the number and phase position of the overtones or harmonics. I have thought for some time that if an instrument could be constructed, sufficiently sensitive to record these vibrations, then we would be down to the very fundamentals of sound.

In going through the literature of communication engineering I find that the Bell Telephone Laboratories have been doing some very interesting and important work in relation to sounds. While primarily interested in communication their engineers have been led to make a thorough study of human speech, music, and noises. Their numerous publications on sound may well serve as a starting point for the study of bird sounds.

They are using the electric oscillograph in their researches. This instrument has been in use for a number of years to record the variations of alternating current, usually 25 and 60 cycles. In recent years its frequency range has been gradually increased and now we have the "Rapid Record Oscillograph" with a range up to 10,000 cycles (*Curtis, Bell System Technical Journal*, XII, January 1933, pp. 76-90). This will record most of the components of speech and music. Briefly the principle is as follows: Sound waves striking a diaphragm cause proportional variations in an

electric current. This in turn sets a vibrator into motion. Through a suitable optical system these vibrations are photographed on a rapidly moving roll of film. This strip of film, when developed, gives a permanent record of the sound. The duration, relative amplitude, frequency, and wave shape can be measured directly from the film.

This, I think, should be the next development in the study of bird sounds. We know very little of the frequencies at which birds sing. Only a trial of this instrument will show whether it is applicable to the entire range. However, at the present rate of technical progress, it can only be a question of time before the complete audible band of frequencies can be recorded. The disadvantages of the instrument are few and can be overcome. Skilled engineers will be necessary to operate it. Its great cost will prevent the ordinary ornithologist from using it, but there are a number of large, well-endowed biological laboratories which could take it up. I believe the results will put the study of birds' songs and calls on a scientific basis and will be well worth the time, trouble and cost.—ANDERS H. ANDERSON, *Route 2, Box 386, Tucson, Arizona.*

Correction. Through an unfortunate error Topsell's name for the Towhee on the plate accompanying Mr. Christy's article in the July 'Auk' was misspelled. The spelling is correct in the text and from it the reader will appreciate the effort to imitate the call of the bird; a similar attempt is responsible for the names 'Towhee' and "Chewink"—ED.

RECENT LITERATURE.

Boulton's 'Traveling with the Birds.'—This excellent publication¹ is in the form of a child's picture-book, with its quarto size, large type, and full page plates of birds usually of natural size. And if, as we venture to predict, it shall become very popular with our boys and girls it will serve a most useful purpose in stimulating a general interest in birds and their protection. But so well has the author presented his subject that it makes interesting reading for both old and young alike while the simplicity of his style makes his treatment of a difficult problem readily understandable to all. Using the works of Chapman, Wetmore, Rowan and others as his basis, he has presented the whole subject of migration in a thoroughly up to date manner but free from all technicalities while he has brought in various correlative phases of bird life in a very clever manner.

As we have recently stated in another connection, the ornithological artist has been handicapped in the recent state bird books by the necessity of crowding his figures on the plates but with the large size of the present volume, and with only the comparatively few species cited in the text to depict, Mr. Walter Weber, who has furnished the illustrations, has been entirely free from this limitation. He has presented us with twelve admirable paintings excellently reproduced illustrating twenty-four species, often only one or two to a plate. The male and female Scarlet Tanager on a branch of flowering dogwood which also appears on the cover appeals particularly to the reviewer as it was in just such a setting that he first made the acquaintance of this species over fifty years ago. The composition of all the plates is excellent and the backgrounds well selected. In addition Mr. Weber has depicted twenty-seven other species in pen sketches in the text. Both author and artist are to be congratulated upon a most attractive and authoritative book.—W. S.

Taka-Tsukasa's 'The Birds of Nippon.'—The second part² of this handsomely gotten-up work is before us, covering the physiography of the country and a continuation of the Gallinaceous birds, two races of *Syrmatiscus soemmerringii* and two of *Phasianus versicolor* being considered.

The high standard of the former part is fully maintained, the original description of each species or subspecies is given in full with a more detailed modern description where necessary, and in the synonymy all of the recent papers by Japanese authors are cited.

¹ Traveling | with the Birds | A Book on | Bird Migration | By | Rudyerd Boulton | Division of Birds | Field Museum of Natural History | Illustrated by | Walter Alois Weber | M. A. Donohue & Company | Chicago, New York | 1933. Pp. 64 pl. 12.

² The Birds of Nippon | By | Prince Taka-Tsukasa | [titles] | Volume I | Part 2 | Physiography | Order Galli | H. F. & G. Witherby 326 High Holborn, London, W. C. 1. Yokendo 7 Moyozono-Cho, Kojimachi-Ku, Tokyo, 20th April, 1933. Pp. V-XXVII + 71-128.

There are three excellent colored plates from paintings by N. Higashi presenting not only the forms described, but hybrids as well, while five beautifully printed photographic plates in brown and green on tinted paper depict habitats, nest of *P. v. versicolor* etc. There is also a large folded physiographical map of the Japanese Empire.

We cannot too strongly praise the completeness of Prince Taka-Tsukasa's treatment of his subject.—W. S.

Stuart Baker's 'Nidification of Birds of the Indian Empire.'—Volume II of this excellent work¹ has recently appeared and fully maintains the high standard set by Volume I which we reviewed in the April issue of 'The Auk.' In the present instalment our author has treated the thrushes, flycatchers, shrikes, warblers, orioles, starlings and related families. Six half-tone plates from photographs illustrate nests and habitats.

Upon glancing through the pages of Mr. Baker's book we are impressed with the extent of his knowledge not only of his subject but of the literature relating to it and with the manner in which he has made good reading of what might easily have been tedious compilation.

His account of the nest-making of the Tailor-bird is particularly interesting. The bird, he tells us, usually employs vegetable cotton or cobwebs for her "thread" and with this she sews together the edges of a single pendant leaf or of two adjacent leaves puncturing them with her slender bill and knotting the threads, in some way not yet ascertained. Other near-by leaves are often sewed to the first ones rarely four or more. The nest proper is built inside the pocket formed by the sewn leaves. Silk from cocoons is sometimes used for sewing and when nesting near human habitations, bits of cotton, silk, or thread are often stolen for the purpose.

In making use of human assistance in the matter of nesting material or nest sites it is amusing to read that the Magpie-Robin often builds in the little spirit or "Pi" houses erected by superstitious natives for wandering spirits to dwell in!

Mr. Baker in his volumes has reached the highest point in "oological" literature and we wish that more of the countless "oölogists" could follow his example in making real use of their collections.—W. S.

A Vermont Bird List.—The Department of Agriculture of Vermont has published a very handy list of the birds of the state by Messrs. H. C. Fortner, Wendell P. Smith, and E. J. Dole.²

Two hundred and ninety-eight species and subspecies are listed, some

¹ The Nidification of Birds of the Indian Empire | By | E. C. Stuart Baker, C.I.E., O.B.E., F.Z.S., etc. | Volume II | Turdidae-Sturnidae. | with six plates. | London: | Taylor and Francis, Red Lion Court, Fleet Street, E. C. 4. | 31st May, 1933. Pp. i-vi + 1-564.

² A List of Vermont Birds (With descriptions appended) Bulletin No. 41. By H. C. Fortner, Wendell P. Smith, and E. J. Dole. Published by Department of Agriculture E. H. Jones, Commissioner [1933]. Pp. 1-54.

of which are included on the authority of early lists without definite corroboration while in the case of rare species detailed modern records are given. The nomenclature of the A. O. U. 'Check-List' is wisely followed both as to technical and popular names for in such a work uniformity is of far more importance than the exercise of personal opinion.

There is appended to the list brief descriptions of the more common Vermont birds which will prove of assistance to beginners or to those who do not have access to standard works; while a preface treats of the economic value of birds.

While there is still plenty for the bird students of the state to do in the matter of working out detailed distributions etc., this list will furnish an excellent basis for future work and will fill a need on the part of many who as the authors state are asking: "What birds do we see in Vermont?"—W. S.

Wetmore and Brooks on Eagles, Hawks and Vultures.—Dr. Alexander Wetmore reappears as author in the latest instalment of the bird articles being published by "The National Geographic Magazine,"¹ while Allan Brooks continues to furnish the excellent illustrations.

Dr. Wetmore's wide ornithological experience has enabled him to present a most readable general account of the "Eagle and his Kin," while the individual sketches of the various species are all that could be desired. Many half-tones from photographs by A. A. Allen, the Finleys, George Shiras and others add to the interest of the article.

Major Brooks has contributed sixteen beautiful plates from original paintings representing thirty species, those of the California Condor, Golden and Bald Eagle, and Osprey being full page illustrations.

We should like to hope that the sportsmen who advocate the extermination of the wonderful birds of prey for their own selfish ends will read this article and appreciate the beauty of its subjects and the importance of their place in nature's scheme before it is too late.

The article is a worthy successor to those which have gone before and the series when completed will form one of the outstanding popular works on the birds of North America.—W. S.

Annual Report of the Hawk and Owl Society.²—Whether anything can be done to save our hawks and owls may be a matter of opinion but certainly the greatest needs to that end are education and the arousal of popular indignation against the selfish attitude of the majority of sportsmen, and the Hawk and Owl Society is on the right track in its efforts to arouse such popular opinion.

The pages of its annual report are full of accounts of the ruthless slaugh-

¹ The Eagle, King of Birds, and his Kin. By Alexander Wetmore with Paintings from Life by Maj. Allan Brooks. Nat. Geogr. Mag., LXIV, No. 1. July, 1933, pp. 43-96.

² Annual Report of the Hawk and Owl Society. Bulletin No. 3. March, 1933, pp. 1-36 with many illustrations.

ter of these birds and should be read by all who are interested in wild life conservation. The only criticism of the report is that we fail to find any mention of membership dues in the Society or any address to which applications or contributions may be sent. We would, therefore, add that the address of the secretary, Mr. Warren F. Eaton, is 128 Wildwood Ave., Upper Montclair, N. J.—W. S.

Yearbook of the Indiana Audubon Society.—This interesting annual¹ is full of information about the birds of Indiana and their protection besides more general articles relating to the Cardinal, Blue Jay, Chimney Swift, Robin, Dove, European Tree Sparrow, Bronzed Grackle, as well as on Bird Song, Birds' Eyes and Bird Banding—forty-two items in all. It is a publication that every bird student in the state should have and reflects credit upon the Society responsible for its publication.—W. S.

Breeding Colonies of the White Pelican.—This publication² of the National Park Service, Dept. of the Interior, presents an interesting résumé of the known breeding colonies of the White Pelican in the United States and Canada with their present condition, embodying the results of the observations of many individuals and a study of the literature.

There are today only four breeding colonies of significance in the United States and three in Saskatchewan representing about 30,000 breeding birds. The greatest menace to the existence of the birds seems to be the draining of the lakes which constitute their breeding places, but with present protection the bird does not seem to be in immediate danger of extermination. "The National Park Service," says the director, Horace M. Albright, "recognizes the need for complete protection for the White Pelican and will see that it is given."

There is a good bibliography and several maps.

The report will prove of much interest to all conservationists and the bibliographer will find equal interest in its form, which is some sort of mimeographed or photographic reproduction. If this is not "publication" it is difficult to say why, and if it is, it will be equally hard to exclude any sort of mimeographed product. Furthermore if all such are accepted as "publications" a number of new scientific names proposed only in such form must be accepted and many papers previously ignored must be included in bibliographies.—W. S.

Other Publications.

Alexander, W. B.—The Rook Population of the Upper Thames Region. (*Journal of Animal Ecology*, May, 1933.)—In an area of 910

¹ The Audubon Yearbook 1933. Published by the Indiana Audubon Society for Conservation of Bird Life. Price \$1.00. Check to be mailed to Miss Margaret R. Knox, 4030 Park Ave., Indianapolis, Ind.

² History and Present Status of the Breeding Colonies of the White Pelican (*Pelecanus erythrorhynchos*) in the United States. By Ben H. Thompson. Contribution of Wild Life Division Occasional Paper No. 1. Pp. 1-82.

square miles 30,500 Rook nests were counted or 33.5 per square mile. Much interesting information is presented regarding distribution, variation from year to year, winter population, etc.

Alexander, W. B.—The Swallow Mortality in Central Europe in September, 1931. (*Jour. Animal Ecology*, May, 1933.)

Alexander, W. B.—A Census of House Martins: Are their Numbers Decreasing? (*Jour. Ministry of Agriculture*, April, 1933.)—Counts of nests in 1931 and 1932 show only a slight decrease, probably due to over-looking nests in the latter count or to yearly fluctuation.

Berry, John.—Notes on Birds Seen in the River Ness Area, May-June, 1932. (*Scottish Naturalist*, July-August, 1933.)

Beveridge, George.—On the Changes in the Distribution of Wild Ducks in North Uist [Scotland]. (*Scottish Naturalist*, July-August, 1933.)

Brand, Albert R.—Hunting with a Sound Camera. (*Natural History*, July-August, 1933.)—A most interesting account of the methods of the author in recording bird song under natural conditions.

Brodkorb, Pierce.—Remarks on the Genus *Limnodromus* Wied. (*Proc. Biol. Soc. Washington*, Vol. 46, pp. 123-128, June 30, 1933.)—Claim is made that Say's *Limosa scolopacea* is really based upon an individual of *L. griseus* or in other words both names apply to the Eastern Dowitcher and the Western race is therefore renamed *L. g. fasciatus* (p. 124), type from Alaska. The recently described form *L. g. hendersoni*, from Alberta, Mr. Brodkorb fails to distinguish from true *griseus* while he finds many intergrades between the eastern and western birds. Furthermore he doubts the existence of any breeding colony of Dowitcher east of Hudson Bay.

Clarke, Carter W.—Night-flying Homers of the Signal Corps. (*Natural History*, July-August, 1933.)—Describing the development of a night-flying race of Carrier Pigeon.

Conover, H. B.—The Races of the Tinamou, *Crypturellus cinnamomeus*. (*Proc. Biol. Soc. Washington*, Vol. 46, pp. 113-118, June 30, 1933.)—Nine races are recognized of which *C. c. vicinior* (p. 115) from Honduras is described as new.

Errington, Paul L.—The Wintering of the Wisconsin Bobwhite. (*Trans. Wisconsin Acad. Arts and Letters* 1933, pp. 1-35.)—Interesting results of three seasons field work with discussion of relation of food, cold and snow to winter Quail losses.

Friedmann, Herbert and Bowen, W. Wedgwood.—Geographical Variation in the Yellow-billed Shrike, *Corvinella corvina*. (*Proc. Biol. Soc. Washington*, Vol. 46, pp. 121-122, June 30, 1933.)—*C. corvina chapini* (p. 121) from Kavirondo and *C. c. caliginosa* (p. 122) from Bahr el Ghazal, are described as new.

Hartert, Ernst.—Journey to Algeria and Marocco in 1929 and Crossing the Great Atlas in Marocco in 1930. (*Novitates Zool.*, XXXVIII, pp. 331-338, June, 1933.)—Interesting itinerary with many notes on birds.

Holt, Ernest G.—Ibises and Flamingoes in Florida. (*Florida Naturalist*, July, 1933.)—Points out errors in a former number regarding the alleged occurrence of the Scarlet Ibis and Flamingo in the state.

Kelso, Leon.—Note on the Genus *Pulsatrix*. (A privately printed brochure entitled "Biological Leaflet No. 1, July 25, 1933.)—*Novipulsatrix* (p. 1) proposed as a new subgenus for *Pulsatrix sharpei* and allies.

Murphy, Robert Cushman.—August on Fire Island Beach [Long Island, N. Y.]. (*Natural History*, July–August, 1933.)—Many observations on birds.

Naumberg, Elsie M. B.—A Study of *Zenaida auriculata*. (*Amer. Museum Novitates*, No. 648, July 21, 1933.)—Eleven races recognized.

Zimmer, John T.—Studies of Peruvian Birds, IX. The Formicarian Genus *Thamnophilus* Part I. (*Amer. Museum Novitates*, No. 646, July 19, 1933.)—Four new subspecies described. The subject is continued in Part II (*Amer. Mus. Novit.* No. 647, July 21, 1933.)—In which another new race is described.

The Ornithological Journals.

Bird-Lore. XXXV, No. 4. July–August, 1933.

Myrtle Warbler Home-Life. By Lawrence H. Walkinshaw.—With excellent photographs.

Tree Swallows: Some Observations Made at Close Quarters. By J. Allen Cash.—Studies and photographs at a nesting box.

Dr. Allen's life history deals with the Indigo Bunting and is fully up to the standard of his former sketches.

The Condor. XXXV, No. 4. July–August, 1933.

The Midsummer Status of Certain Birds in the Southern California Lowlands. By John McB. Robertson.

Notes on the Anatomy and Breeding Habits of Crossbills. By Thomas T. McCabe and Elinor B. McCabe.—A full review of the literature regarding the irregular breeding of Crossbills and an interesting discussion of the matter with the suggestion "that the whole reproductive cycle is more a genetically, less an environmentally, controlled phenomenon."

Frigate-Birds of the West American Coast. By H. S. Swarth.—With especial bearing on the Galapagos birds.

The Span of the Nesting Season of Birds in Butte Co., California, in Relation to their Food. By William B. Davis.

The Nesting Season of Birds in Doniphan Co., Kansas. By Jean M. Linsdale.

The Wilson Bulletin. XLV, No. 2. June, 1933.

Relations Between the Sexes in Song Sparrows. By Margaret M. Nice.—Among many other interesting observations are records of two cases of a male with two mates at the same time.

In the Haunts of Cairns' Warbler—A Retrospect and a Comparison. By G. Eifrig.—Observations in Garrett Co., Md.

Franklin Hiram King. By Mrs. H. J. Taylor.—With portrait.
Summer Warblers of the Crawford County, Michigan, Uplands. By Leonard W. Wing.

Bird-Banding. IV, No. 3. July, 1933.

Nesting Success During Three Seasons in a Song Sparrow Population. By Margaret M. Nice.

State Distribution of Returns from Banded Ducks. By Frederick C. Lincoln.—Fourth paper.

Some Ornithological Experiences in Europe. By Margaret M. Nice.

The Cardinal. III, No. 6, July, 1933.

Ligonier Bird Notes. By Norman McClintock.

There is a review of Sutton's "Birds of Southampton Island." by R. M. Anderson and a sketch of the late Dr. W. J. Holland, by A. Avinoff.

The Oölogist. XLX, Nos. 6 to 8. June, July, and August, 1933.

A biography of John Krider. By Frank L. Burns (June).

A List of Breeding Birds of Philadelphia. By R. F. Miller (July).

Iowa Bird Life. III, No. 2. June, 1933.

Many local notes on Iowa birds.

The Migrant. IV, No. 2. June, 1933.

A Day in Crane town. By Harry S. Vaughn.—Ward's Heron colony at Reelfoot Lake, Tenn.

Spring Bird Census for Tennessee.

A Roost of the Wild Pigeon. By W. R. Manlove.—From personal observation about 1870.

Many local notes on Tennessee birds.

The Heron. No. 2. 1932.

The second issue of this publication is a beautiful piece of book making and fully up to its predecessor of a few years ago. It constitutes the proceedings of the Woodmere Academy Bird Club, Woodmere, N. Y.

A Study of the Bird Life of Cobb's Island, Virginia. By B. C. Berliner.—An excellent summary and comparison with former reports.

Observations at Montauk, 1930-1933. By Robert Arbib.

The History of the Least Terns on the Atlantic Coast. By Richard Weil.

Bird Life of Penobscot Bay, Me. By Daniel Berolzheimer.

Many other short articles and notes, mainly on birds of Long Island.

The Raven. IV, No. 6. June, 1933. [Mimeographed journal.]

A Duck Hawk's Nest [In Rockbridge Co., Va.]. By J. J. Murray.

Louisiana Water-Thrush Breeding in Southern Florida. By J. E. Gould.

Numerous local notes on Virginia birds.

The Ibis. [13th ser.] III, No. 3. July, 1933.

On Some Birds of N. E. Tanganyika Territory. V. By W. L. Selater and R. E. Moreau.

A Contribution to the Ornithology of Chinese Turkestan. II. By F. Ludlow and N. B. Kinnear.

Report on the Birds Collected by the Vernay Expedition to Tenasserim and Siam, II. By Willoughby P. Lowe.

Notes on Arment's Cowbird. By Herbert Friedmann.—With plate; apparently only two specimens are extant.

A Contribution to the Ornithology of Bulgaria. By J. M. Harrison.

Some Spring Observations on the Birds of the Camargue. By W. B. Alexander, T. H. Harrison, H. J. R. Pease, and B. W. Tucker.

A Contribution to the Life-history of the Crespín or Four-winged Cuckoo. By Herbert Friedmann.

On the Names of Petrels and Remarks on some Storm Petrels. By G. M. Mathews.

British Birds. XXVII, Nos. 1, 2, and 3. June, July and August, 1933.

Alterations to the British List. By H. F. Witherby.—(June). Two species reduced to subspecies and three names changed during the year.

A Survey of the Rooks in the Midlands. By A. Roebuck. (June).

Notes on the Little Grebe. By George Bird. (July).—With excellent photographs.

The Marsh Warbler as a Sussex Species. By John Walpole-Bond. (August).

The Rook Roosts of South Northumberland. By W. Raymond Philipson. (August).

Bulletin of the British Ornithological Club. No. CCCLXIX. May 27, 1933.

C. H. Kellaway discussed bird photography in Australia where he considered the birds (except hawks and crows) tamer than those of Europe.

Dr. Ticehurst exhibited downy young of many waders and commented on the relationship of the species. He also exhibited a scarlet example of *Oriolus traillii* which had evidently lost the melanin element in its coloration and suggested that the so-called *O. mellianus* might be the same species with both melanin and the red lipochrome lacking.

G. M. Mathews describes *Diomedella cauta atlantica* (p. 213) S. Atlantic; *Diomedea exulans georgia* (p. 214) S. Georgia and *Pachyptila vittata georgicus* (p. 214) S. Georgia.

Bulletin of the British Ornithologists' Club. CCCLXX. July 15, 1933.

J. G. Mavrogordato read a paper on Flights with Trained Goshawks.

J. Vincent describes *Micropus apus lawsonae* from S. Nyassaland; and Messrs. Grant and Mackworth-Praed describe *Mirafraga rufa lynesii* (p. 246) from Delami Kordofan. They also designate exact type localities for several species of the older authors in this and the preceding number.

The Oologists' Record. XIII, No. 2. June 1, 1933.

A Review of Progressive Oology with Some Speculative Remarks upon the Origin Variation and Elimination of Shell Pigment. By F. L. Burns.

The Avicultural Magazine. (4th ser.) XI, Nos. 7 and 8. July and August, 1933.

Three articles in the July issue describe the successful transportation to Europe of some 200 hummingbirds captured in Brazil and the installation of a number of them in the aviaries of M. Jean Delacour and the London Zoological Society.

In both issues is an article by Walter Goodfellow "Some Reminiscences of a Collector."

The Emu. XXXIII, Part 1. July, 1933.

Destructive Civilization in New Zealand and Its Effect on Bird-Life. By R. H. D. Stidolph.—A sad commentary on the effects of "civilization." Of the bush-dwelling species two are exterminated, six are on the verge of extinction and twelve are absent from vast areas of the country.

The Green-backed Mangrove-Heron. By K. A. Hindwood.—A detailed account of the life-history of the species (*Butorides javanica*) with beautiful illustrations.

The King Shag of Queen Charlotte Sound (*Phalacrocorax carunculatus*). By R. A. Falla.

Many other short articles and notes on Australian birds and many excellent half-tones from photographs.

The South Australian Ornithologist. XII, Part 3. July, 1933.

Notes and papers on South Australian birds with a photograph of a skin of *Pterodroma lessoni*.

Alauda, (ser. 3) V, No. 1. January-March, 1933. [In French.]

Researches on the Orientation of the Carrier Pigeon. By G. Gibault.

A Consideration of the French Nomenclature of Bird Plumages. By Ch. Dupond.

A Study of the Breeding of the Alpine Tit (*Parus atricapillus* subsp.). By H. Jouard.

A Contribution to the Systematic Study of *Parus palustris*. By Noël Mayaud.—Numerous notes on French birds.

Journal für Ornithologie. LXXXI, Heft 3. July, 1933. [In German.]

A Contribution to the Breeding Habits of *Falco s. subbuteo*. By Walter Scholze.

Bird Flight and Air Movement. By E. Christoleit.

Migration Against the Wind. By G. von Schweppenbourg.

On the Bird Fauna of the Anadyr Country. By L. Belopoiski.

Physiology and Acoustics of Bird Voice. By Werner Rüppell.—An elaborate discussion of the subject.

Ornithologische Monatsberichte. XLI, No. 4. July-August, 1933. [In German.]

A Contribution to the Natural History of the Hornbill (*Lophoceros flavirostris leucomelas*). By W. Hoesch.

On the Systematic Position of *Paramythia*. By Ernst Mayr.—Regards this genus and *Oreocharis* as aberrant Dicaeidae.

New Races of Birds from Lihir [Bismarck Archipelago]. By E. Stresemann.—Of the genera *Accipiter*, *Lalage*, *Rhipidura* and *Pachycephala*.

Der Vogelzug. IV, No. 3. July, 1933. [In German.]

Kinaesthetic Memory and Distant Orientation in Birds. By William Meise.

Contains many notes on bird banding in Europe with longer articles on the Starling and Stork, also the report on the operations of the Biological Station at Heligoland.

Beiträge zur Fortpflanzungsbiologie der Vögel. IX, No. 4. July, 1933. [In German.]

A Contribution to our Knowledge of the Nesting of Some Palaearctic Owls. By H. Grote.

Some Observations on the Breeding Habits of *Circus aeruginosus* and *C. cyaneus*. By Erik Rosenberg.

Nests and Eggs from New Britain, South Sea. By P. O. Meyer.

Der Ornithologische Beobachter. XXX, Hefte 8 and 9. June and August, 1933. [In German.]

On the Arrival of the Purple Heron, Night Heron and Little Bittern in Switzerland. By U. A. Corti. (June).

On the Sheld-Duck (*Tadorna tadorna*). By A. Schifferli. (August).

Many other notes on the birds of Switzerland.

Le Gerfaut. XXIII, Fasc. 1, 1933. [In French.]

On the Migration of *Oenanthe oe. leucorhoa* and *Oe. oe. schioleri* in Belgium. By G. van Havre.

Many notes on bird banding, etc., in Belgium.

Ardea. XXII, Afl. 1-2. July, 1933. [Mainly in Dutch.]

On the "Solitaire" of the Island of Rodriguez. By Th. Mortensen [In English].—This is a discussion of the authenticity of Legaut's 'Voyage et Avantures' and an affirmation of the former existence of the Solitaire which has been stated by a recent author to be a mere myth. Good photographs of the skeleton of this remarkable bird in the museum at Port Louis, Mauritius, are given.

Other articles discuss bird observations in the Netherlands during 1932 and on routes of migration.

OBITUARY.

BARTON WARREN EVERMANN, a Member of the American Ornithologists' Union since 1901, and originally elected as an Associate at the first meeting in 1883, died in Berkeley, Calif., Sept. 27, 1932, in the 79th year of his age. He was born at Albia, Monroe Co., Iowa, Oct. 24, 1853, the son of Andrew and Nety (Gardner) Evermann. On his twenty-second birthday he married Miss Meadie Hawkins of Burlington, Ind., who died a few years ago. Evermann was educated at Howard College, Kokomo, Ind., and graduated from the University of Indiana in 1886, with the degree of B.S. Later he received from his alma mater the degrees of A.M. in 1888, Ph.D. in 1891, and LL.D. in 1927. He also received the degree of LL.D. from the University of Utah in 1922.

Dr. Evermann's long years of activity fall naturally into three periods. For ten years he was a teacher and superintendent of schools in Indiana and California, for a quarter of a century he was associated with fisheries work and for nearly two decades was engaged in museum activities. He served as Professor of Biology in the Indiana State Normal School from 1886 to 1891 and from 1888 to 1914 was connected with the U. S. Fish Commission and Bureau of Fisheries, in various capacities, including appointments in charge of Scientific Inquiry and of the Alaska Fisheries Service. He also served as U. S. Fur Seal Commissioner in 1892 and later as chairman of the Fur Seal Board. On retiring from the Bureau of Fisheries in 1914 he became Director of the Museum of the California Academy of Sciences and rounded out his career by establishing the Steinhart Aquarium and building up the Academy in various directions.

Evermann's ornithological activities were developed mainly during his early years as a teacher, and his later years as a museum director. His publications on birds, more than forty in number, relate chiefly to species observed in California, Indiana, and Alaska, and most of them appeared in 'The Ornithologist and Oologist,' 'The Auk' and 'The Condor.' His first contribution appeared in the 'Delphi Journal' in 1878-79 under the title 'Notes on the Winter Birds of Carroll County, Indiana.' From August, 1879 to July, 1881, he taught school at Santa Paula, Calif., and the observations then made were finally summarized in his 'List of the Birds observed in Ventura County, California' (Auk, 1886). A year later appeared his 'Birds of Monroe County, Indiana, in 1888 his 'Birds of Carroll County,' and in 1920 a chapter on birds in his report on Lake Maxinkuckee, Ind. One of his most important contributions was a paper, published in 'The Auk' in 1913, entitled 'Notes on Eighteen Species of Birds new to the Pribilof Islands' and included four species new to North America. Of entirely different character but even now well worth consulting are his sketches of some of the characteristic California birds, notably, the Black Crested Flycatcher in the 'O & O,' 1882; 'Lopho, the Quail' in 'Harper's

Monthly,' Feb. 1902; and 'Modesty Itself, the Brown Towhee' in 'Recreation,' April 1904. In later years his chief contribution consisted in stimulating ornithological work in the California Academy of Sciences and in the Cooper Ornithological Club. During the three years, 1917-1919, he served as President of the Club and in 1926 was elected an Honorary Member.

Evermann was primarily an ichthyologist, his interest in fishes being due mainly to David Starr Jordan and others whom he met in college days and with whom he maintained a life-long association. Naturally most of his publications dealt with fish or fisheries but all that need be said in this connection is that they comprised accounts of many native species, especially salmon and the golden trout of the High Sierras, and reports on the fishes of various parts of the United States, Alaska, Porto Rico, the Philippine Islands, and Peru. With Dr. Jordan he published among other works 'The Aquatic Resources of The Hawaiian Islands,' 'The Fishes of North and Middle America' in four volumes, and a 'Check List of the Fishes of North America' in two editions.

As a conservationist Dr. Evermann had an interesting record. Shortly after the organization of the League of American Sportsmen in 1898 he took part in its work, contributed to its journal, 'Recreation,' and several years later gave series of lectures on game and fish protection at Cornell and Yale. He took great interest in fishery treaties and the broader aspects of fish protection; also in the protection of the fur seal and other fur-bearing animals of Alaska, the valley elk of California, the sea elephant of Guadalupe Island, and in measures for the protection of marine life in the Pacific.

Evermann was an energetic, enthusiastic, and tireless worker and had the rare ability to put the results of his investigations in permanent form and secure their publication as promptly as possible. He was never too busy to take part in public affairs, scientific or otherwise. While in Washington he served for several years on the Board of Education and took an active part in the affairs of the Biological Society and the Washington Academy of Sciences. In San Francisco he was active in advancing scientific work and in the Commonwealth Club. Always cheerful and interested in current activities his enthusiasm was contagious, and it was a pleasure to meet him or associate with him in any undertaking.—T. S. P.

NOTES AND NEWS.

We again call attention to the Semicentennial Jubilee Meeting of the A. O. U. in New York City, November 13-16, 1933. There is still plenty of time for members to arrange for the trip and we urge everyone who can possibly get away to be present. It will be an occasion to be remembered and each member can assist in making it a greater success by attending the sessions. Those who have been in the habit of attending A. O. U. meetings will not have to be reminded of their attractions but those who have not, have an experience before them. Nothing stimulates one's interest in ornithology as do these meetings, with their exchange of ideas, their opportunities of meeting in person those who have been previously mere names, and their general atmosphere of good fellowship and coöperation.

In order that there may be no mistake or failure in making your arrangements we repeat:

HOTEL HEADQUARTERS: Hotel New Yorker, 8th Ave. and 34th St.

Correspondence relative to reservations or garage facilities should be addressed to Mr. David Olmstead, at the hotel.

MEETINGS: at the American Museum of Natural History, 77th St. and Central Park W.

PAINTINGS etc., intended for the art exhibit should be sent to the museum marked "A. O. U. Exhibit" not later than the last week of October and correspondence relative to them addressed to Mr. Courtney Brandreth, care of the Museum.

TITLES OF PAPERS to be presented at the meeting should be sent to the Secretary, Dr. T. S. Palmer, 1939 Biltmore St., Washington, D. C., not later than *October 15* accompanied by an abstract of not over 200 words.

Any further information may be obtained from the Chairman of the Local Committee, Dr. Frank M. Chapman, at the Museum.

IT HAS been arranged to hold the EIGHTH INTERNATIONAL ORNITHOLOGICAL CONGRESS at Oxford, England, from July 2 to 7, 1934. Headquarters will be the Rhodes Building, which contains an excellent hall and smaller lecture rooms and is also close to the University Museum.

It is proposed to hold an exhibition of ornithological paintings at Oxford during the Congress.

Accommodations for some of the Members of the Congress will be available at certain Colleges and the Secretary will be glad to hear from those who wish to have rooms reserved for them.

Details of the Excursions will be announced later.

Further particulars may be obtained from the Secretary, Rev. F. C. R. Jourdain, Whitekirk, Southbourne, Bournemouth, England.

MR. HARRY S. SWARTH, Chairman of the Index Committee has completed the arduous task of preparing the Ten-Year Index, 1921-1930, to The Auk for the printer and arrangements have been made for its immediate publication.

THE D. APPLETON-CENTURY Co. announce the publication in October of Dr. Frank M. Chapman's Autobiography covering sixty years of his life as a bird-lover. Its appearance just prior to the Fiftieth Anniversary Meeting of the A. O. U. is timely as his reminiscences will cover a large part of the life of the Union with many of the activities of which he has been so closely identified.

THE UNIVERSITY OF WISCONSIN announces the establishment of a Chair of Game Management in its agricultural college. The chair is financed for five years by the Wisconsin Alumni Research Foundation.

Aldo Leopold has been appointed to the new position. He will conduct research and extension work directed toward the modification of agricultural and forest practices in the interests of game and other wild life. The objective is to develop game-cropping as a land use, both on going farms and on Wisconsin's growing area of idle tax-reverted lands.

The chair carries with it the directorship of the University Arboretum.

No undergraduate courses in game management are contemplated, but graduate research studies are to be undertaken as a means of developing a factual basis for a conservation program.

ON September 11, 1933, President Roosevelt approved the regulations covering wild-fowl shooting for the coming season.

Shooting of Brant on the Atlantic Coast is absolutely prohibited owing to the great decrease in their numbers due to the shortage of eel grass; and the daily bag limit on water fowl is reduced to 12 while not more than 8, in the aggregate, may be Canvasbacks, Redheads, Scaups, Teals, Shovelers or Gadwalls.

Swan and other species already on the absolutely protected list will remain there.

In Currituck Sound, since the restoration of the locks in the Albermarle-Chesapeake Canal, the plant life on which the ducks formerly fed is appearing again and prospects for an increase in the wintering water fowl in the near future are bright. The general situation, however, throughout the country, especially on the breeding grounds, is very serious due to extensive draining of marsh land and the prolonged droughts.

Two veteran zoologists of the U. S. Biological Survey were retired on July 31, last: Vernon Bailey after 46 years of service and Theodore S. Palmer, after 44 years. They are both still active in scientific research and we trust that the relief from routine will enable them to pursue more freely the lines of work in which they are so deeply interested.

INDEX TO VOLUME L.

[New generic, specific and subspecific names are printed in heavy face type.]

- ACANTHIS* *cannabina*, 180.
 hornemanni exilipes, 365.
 linaria linaria, 198, 365.
Accipiter *superciliosus superciliosus*, 323.
 Adams, I. C., Jr., late nesting of the Yellow-billed Cuckoo in Missouri, 107.
Aedon *familiaris*, 182.
 galactodes, 182.
Aenigmatolimnas, 249.
 Africa, birds of, 23, 237, 248, 433.
Agelaius *phoeniceus phoeniceus*, 372.
 thilius alticola, 142.
Aimophila *aestavilis*, 365.
 aestivalis bachmani, 198.
 carpalis bangsi, 249.
 cassini, 62.
Ajaia *ajaja*, 429.
 Alabama, birds of, 105, 113, 209, 234, 359, 368.
 Alaska, birds of, 97, 378.
 'Alauda,' reviewed, 256, 463.
Alauda *cristata*, 180.
Albatross, Yellow-nosed, 201.
 Alberta, birds of, 249.
Alca *torda*, 231.
Alcippe, 364.
 cinerea, 364.
Alcippiornis, 264.
 Alexander, W. B., notice of his recent papers, 458.
 Alle alle, 105, 196, 230, 325-349.
 Allen, Devere, Pine Grosbeak nesting in Connecticut, 442.
 Allen, Francis H., Forster's Tern in Massachusetts again, 104; treatment of hybrids, 151; see also Townsend, Charles W.
 Allen, Robert P., breeding range of the Herring Gull extended, 433.
 Almirante, birds of, 300.
 American Ornithologists' Union, Fiftieth Stated Meeting; 64-79; fifty-first meeting, 262, 467; report of the secretary, 80-84; report of committee on biography and bibliography, 84-86; report of committee on bird protection, 87-90.
 A. O. U. Check-List, corrections to the, 201-204.
Ammodramus *savannarum australis*, 373.
Ammomanes *deserti*, 180.
Ammospiza *caudacuta nelsoni*, 198.
 maritima *maritima*, 122.
 maritima *subsp.*, 62.
Anas *madagascariensis*, 149.
 punctata delacouri, 149.
 rubripes rubripes, 61, 199, 367.
 Anderson, Anders H., a suggestion for a scientific method of studying bird sounds, 453.
Anhinga, 427.
 anhinga, 61.
Ani, Groove-billed, 124.
Anser *albifrons albifrons*, 193, 202.
 anser, 208.
 fabalis, 202.
Anthus *spinoletta rubescens*, 124.
Antrostomus *carolinensis*, 107, 362, 368.
 vociferus vociferus, 436.
Aphanotriccus *audax*, 305.
 'Aquila,' reviewed, 150.
Aquila, 378.
 chrysaetos, 185.
 chrysaetos canadensis, 194, 431.
 heliaca, 185.

- Aramidopsis, plateni, 247.
 Aramus pictus pictus, 370.
 Arborophila rufipectus, 248.
 Archilochus colubris, 369.
 'Archives Suisses d'Ornithologie,'
 noticed, 258.
 'Ardea,' reviewed, 259, 464.
 Ardea cinerea cinerea, 201.
 herodias herodias, 427.
 würdemanni, 370.
 Arenaria interpres interpres, 203.
 i. morinella, 99, 231, 367, 444.
 Arizona, birds of, 124.
 Arkansas, birds of, 206, 362, 436.
 Asio flammeus, 184.
 f. flammeus, 436.
 f. ponapensis, 380.
 wilsonianus, 105, 436.
 Astur atricapillus atricapillus, 194.
 Athene glaux, 184.
 Atkins, John Wiley, obituary of,
 153.
 Auk, Great, 204.
 Razor-billed, 231.
 'Auk, The' financial condition of,
 156, 363, 384; Allen volumes of,
 156.
 Austin, O. L., Jr., review of his
 'Birds of Labrador,' 127.
 Australia, birds of, 385-395.
 Automolus xantippe, 139.
 'Avicultural Magazine,' reviewed,
 147, 255, 462.
 'Aviculture,' reviewed, 145, 253.
 Avocet, 100, 195.
 BAGG, AARON C., and Elliot,
 Samuel A., Jr., courtship of the
 Hooded Merganser, 430; notes
 from the Connecticut valley in
 Massachusetts, 445.
 Bailey, Alfred M., the Baikal Teal
 from King Island, Alaska, 97.
 Bailey, A. M., Brower, C. D., and
 Bishop, L. B., notice of their
 'Birds of the Point Barrow
 Region,' 378.
 Bailey, A. M. and Dickinson, F. R.,
 notice of their 'Through the
 Lens,' 138; of their 'Camera
 Hunting in the Haunts of the
 Golden Eagle,' 378; of their
 The 'Avo-chick,' 379.
 Bailey, A. M., and Niedrach, R. J.,
 notice of their 'The Domain of
 the Camp Robber,' 138; of their
 'The Mountain Plover,' 248.
 Baker, E. C. Stuart, review of his
 'Nidification of Birds of the
 Indian Empire,' 241, 456.
 Baker, William C., Brewster's War-
 bler in Blue-wing plumage, 116.
 Baldwin, S. Prentiss and Kendeigh,
 S. C., review of their 'Physiology
 of the Temperature of Birds,' 129.
 Baldwin Bird Research Laboratory,
 work of the, 264.
 Ball, W. Howard, notice of his
 'Some Notes on Rare Birds of
 the Washington Region,' 138.
 Bangs, Outram: biography of, 265-
 274; notice of his 'Birds of Western
 China Obtained by the Kelley-
 Roosevelts Expedition,' 138.
 Bangs, Outram and Griscom, Lud-
 low, notice of their 'New or Little
 Known Birds from Costa Rica,'
 248.
 Bangs, Outram and Loverage,
 Arthur, notice of their 'Results
 of a Scientific Expedition to S.
 W. Tanganyika,' 248.
 Bartramia longicauda, 228, 450.
 Bassett, Mrs. V. H., Anhinga
 nesting in Georgia, 427.
 Bathornis veredus, 213.
 Beatty, M. E., Presnall, C. C., and
 Harwell, C. A., notice of their
 'Birds of the Yosemite National
 Park,' 379.
 'Beiträge zur Fortpflanzungsbiolo-

- gie der Vögel,' reviewed, 149, 257, 464.
- Beveridge, George, notice of his 'Changes in the Distribution of British Wild Geese,' 138.
- Biological Society of Washington, publications of, 157.
- Bird, Aldine R., notice of his 'The Ivory-bill is Still King,' 248.
- Bird-banding, 91, 250.
- 'Bird-Banding,' reviewed, 144, 252, 461.
- 'Bird-Lore,' reviewed, 143, 250, 381, 460.
- 'Bird Notes and News,' reviewed, 147.
- Birds of prey, 378.
- Bishop, H. O., notice of his 'The Wild Pigeon,' 138.
- Bishop, L. B., see Bailey, A. M.
- Black, J. D., Snowy Egret in Arkansas 206; Long and Short-eared Owls in northwestern Arkansas, 436.
- Blackbird, Brewer's, 442.
European, 381.
Red-winged, 372, 452.
Rusty, 452.
Yellow-headed, 192, 198, 370, 446.
- Blincoe, Benedict J., Chuck-will's-widow again in Ohio, 362.
- Bluebird, Eastern, 109, 452.
- Bobolink, 119, 450.
- Bob-white, 97, 249.
Texas, 199.
- Boggs, Marion A., rare birds in the North Carolina mountains, 233.
- Bombycilla garrula pallidiceps, 227.
- Bond, Frank, review of his 'My Bird Boarders,' 378.
- Booby, Blue-faced, 92.
- Boulton, Rudyerd, notice of his 'New Tree Partridge from Szechwan,' 248; review of his 'Traveling with the Birds,' 455.
- Bowen, W. Wedgwood, see Friedmann, Herbert.
- Brand, Albert R., notice of his 'Hunting with a Sound Camera,' 457.
- Brant, 209.
American, 201, 209, 230.
- Branta bernicla hrota, 201, 209, 230.
canadensis hutchinsi, 61.
minima, 61.
leucopsis, 202.
- Brazil, birds of, 323.
- 'British Birds,' reviewed, 137, 255, 383, 462.
- British Columbia, birds of, 205.
- British Honduras, birds of, 250.
- British Ornithologists' Club, 'Bulletin,' reviewed, 146, 254, 383, 462.
- Brodkorb, Pierce, notice of his 'Remarks on the Genus Limnodromus,' 459; see also, Stevenson, James,
- Brooks, A. B., West Virginia breeding record for the Saw-whet Owl, 361.
- Brooks, Allan, some notes on the birds of Brownsville, Texas, 59-63; notice of his 'Notes on a Short Trip to Nova Scotia and New Brunswick,' 379; of his paintings of 'Crows, Magpies and Jays,' 245; of his paintings of the 'Hawks, Eagles and Vultures,' 457.
- Brooks, Maurice, American Egret in Lewis County, W. Va., 94; Lark Sparrow breeding in West Virginia, 121; peculiar behavior of hawks with flocks of Starlings, 211; Cape May Warblers destructive to grapes, 222; apparent range extension of the Eastern Savannah Sparrow, 443.

- Brooks, W. Sprague, Eastern Robin laying white eggs, 221.
- Brower, C. D., see Bailey, A. M.
- Bryant, H. C., report of the committee on bird protection of the A. O. U., 87-90.
- Buarremon phaeopleurus exortus, 142.
- Bubo virginianus virginianus, 372.
- Buckalew, Herbert, American Egret nesting in Delaware, 206.
- Buffle-head, 202, 445.
- Bulbul, Palestine, 183.
- Bunting, Eastern Snow, 227.
Indigo, 370.
Lark, 198.
Meadow, 181.
Painted, 234.
Snow, 245.
- Burleigh, Thomas D., the Song Sparrow now a breeding bird in South Carolina, 226.
- Burton, E. M., and Chamberlain, E. B., Laughing Gull breeding on the South Carolina coast, 360.
- Bush-Tit, Lead-colored, 221.
- Bustard, Houbara, 185.
- Buswell, W. M., notice of his 'The Song of the Shrike,' 138.
- Buteo, 212.
albicaudatus hypospodius, 61.
borealis borealis, 356.
conterminus, 212.
contortus, 212.
dananus, 212.
ferox, 185.
fragilis, 212.
grinnelli, 212.
lineatus texanus, 61.
melanoleucus, 212.
platypterus, 233.
p. platypterus, 356.
typhoius, 212.
- Buteogallus subtilis, 303.
- Butorides virescens virescens, 61.
- Buzzard, Long-legged, 185.
- Buzzard, Long-legged, Honey, 185.
Turkey, 30-34.
- CACCABIS chukar, 185.
- Cactornis inornata, 15.
- Calamospiza melanocorys, 198.
- Calcarius lapponicus lapponicus, 124, 226.
ornatus, 123.
pictus, 371.
- Calidris canutus rufus, 299, 444.
- Campbell, John A., American Redstart breeding in northern Louisiana, 441.
- Campbell, Louis W., nesting of the Mourning Warbler, near Toledo, Ohio, 117.
- Canada, birds of, 108, 250, 432.
- Canal Zone, birds of, 125.
- Cardinal, Eastern, 452.
- 'Cardinal, The,' reviewed, 252, 461.
- Carduelis carduelis, 366, 445.
elegans, 181.
- Cariama, 214.
- Carpodacus purpureus purpureus, 370.
- Casmerodius albus egretta, 94, 206, 368, 370, 445.
- Catbird, 232, 451, 452.
- Cathartes aura septentrionalis, 229, 431.
- Catoptrophorus semipalmatus inornatus, 102.
s. subsp. ?, 358.
- Cayley, Neville W., review of his 'Australian Finches in Bush and Aviary,' 132.
- Celebes, birds of, 247.
- Centropus grillii, 219.
monachus, 219.
senegalensis, 219.
superciliosus, 220.
toulou toulou, 219.
- Centurus sancticruzi pauper, 437.
- Ceophloeus lineatus similis, 437.
pileatus abieticola, 199.

- Cepphus grylle grylle, 204.
 Cerchneis tinnunculus, 185.
 Chaetura pelagica, 369.
 Chaffinch, 181.
 Chalybura urochrysa isaurae, 301.
 Chamberlain, E. B., Bridled Tern in South Carolina, 104; Eastern Red-tailed Hawk breeding on the South Carolina coast, 356.
 Chapin, James P., Little Gull again in upper New York Bay, 434; notice of his 'Fourteen New Birds from Tropical Africa,' 139; review of his 'Birds of the Belgian Congo,' 237.
 Chapman, Floyd B., see Hicks, L. E.
 Chapman, Frank M., the migration of turkey buzzards as observed on Barro Colorado Island, Canal Zone, 30-34; notice of his 'From a Tropical Air Castle,' 139; obituary of Frederick J. Dixon, 153; announcement of his 'Autobiography,' 468.
 Charadrius dubius curonicus, 203.
 hiaticula hiaticula, 203.
 melodus, 215, 444, 448.
 nivosus tenuirostris, 234.
 semipalmatus, 301, 448.
 Charitonetta albeola, 202.
 Chaulelasmus streperus, 202.
 Chen caerulescens, 193, 209, 353, 372, 450.
 hyperborea atlantica, 352.
 h. hyperborea, 193.
 Chickadee, Black-capped, 374.
 European, 246.
 Long-tailed, 111.
 Chiffchaff, 182.
 China, birds of, 138, 142, 244, 248, 378, 379.
 Chisholm, A. H., the Cuckoo problem in Australia, 385-395.
 Chlidonias leucoptera, 204.
 nigra surinamensis, 105, 300.
 Chloroceryle aenea aenea, 323.
 amazona, 437.
 americana isthmica, 437.
 inda, 300.
 Chlorospingus ophthalmicus hon-duratus, 146.
 o. schistaceiceps, 146.
 Christy, Bayard H., bird actions during eclipse of the sun, 125; Topsell's 'Fowles of Heauen,' 275-283.
 Chuck-will's-widow, 107, 362, 368.
 Ciccaba, 139.
 albogularis, 139.
 hylophila, 435.
 Cichlocolaptes leucophrys, 323.
 Cichlornis whitneyi, 380.
 Ciconia alba, 186.
 ciconia, 247.
 nigra, 247.
 Circaetus, 378.
 Cistothorus stellaris, 235, 372.
 Clangula hyemalis, 202.
 Claravis mondetoura umbrina, 300.
 Clark, Edith M., singing of the Red-breasted Nuthatch, 112.
 Clarke, Carter W., notice of his 'Night-flying Homers of the Signal Corps,' 459.
 Clytorhynchus, 380.
 Coccyzus erythrophthalmus, 448.
 Cocornis agassizi, 15.
 Coker, Coit M., Eastern Henslow's Sparrow in North Carolina in summer, 225.
 Colaptes auratus \times cafer, 362.
 mexicanus mexicanoides, 437.
 Cole, L. J., the relation of light periodicity to the reproductive cycle, migration and distribution of the Mourning Dove, 284-296.
 Colinus nigrogularis coffini, 141.
 virginianus texanus, 199.
 v. virginianus, 97.
 Coloeus monedula, 183.
 Colorado, birds of, 377.

- Columba schimperi*, 185.
Columbigallina passerina passerina, 197, 369.
Colymbus auritus, 201.
 dominicus brachypterus, 60.
 grisevena holboelli, 201, 445.
 Common, Minna Anthony Com-
 mon, a late nesting hummingbird, 408-413.
Compsothlypis americana pusilla, 199.
 'Condor, The,' reviewed, 144, 251, 382, 460.
Conirostrum cyanonotum, 142.
 Connecticut, birds of, 99, 105, 328, 442, 444.
Conopophaga castaneiceps subtorridus, 142.
 Conover, H. B., notice of his 'The Races of the Tinamou, *Crypturellus cinnamomeus*,' 459.
 Cooke, May Thacher, speed of bird flight, 309.
 Coot, American, 369.
 European, 203.
Coragys atratus atratus, 194.
 Cormorant, Double-crested, 230, 234, 434, 444.
 Florida, 61.
Corvinella corvina, 459.
 c. caliginosa, 459.
 c. chapini, 459.
Corvus agricola, 183.
 brachyrhynchos paulus, 199.
 corax principalis, 447.
 cornix, 183.
 cryptoleucus, 62.
 frugilegus frugilegus, 204.
 ossifragus, 445.
Coryphotriccus albobittatus, 305.
 Costa Rica, birds of, 248, 298.
Cotile riparia, 182.
 rupestris, 182.
 Cottam, Clarence, winter records for the coastal region of North Carolina, 231; the Blue Goose in North Carolina, 353; spring migration of the Great Blue Heron, 427.
 Cottam, Clarence and Knappen, Phoebe, oil gland usually tufted in *Hydranassa tricolor ruficollis*, 94.
 Cottam, Clarence, and Kelso, Leon, an incubating Woodcock, 170-173.
Coturnicops noveboracensis, 446.
 Coucal, Madagascar, 219.
 Cowbird, 120.
 Craig, Wallace, the music of the Wood Pewee's song and one of its laws, 174-178.
 Crane, Sandhill, 191.
Creciscus, 142.
Crocethia alba, 203, 231, 299.
 Crossbill, Newfoundland, 198.
 White-winged, 192, 198.
Crotophaga ani, 300.
 sulcirostris, 124.
 Crow, American, 249.
 Fish, 445, 452.
 Hooded, 183.
 Southern, 199.
 Crows, 245.
Cryptoglaux acadica, 227.
 a. acadica, 361, 368.
Crypturellus cinnamomeus, 459.
 c. vicinior, 459.
 Cuba, birds of, 218, 333.
 Cuckoo, Black-billed, 448.
 European, 183.
 Yellow-billed, 107, 452.
 Cuckoos, Australian, 385-395.
Cuculus canorus, 183.
 Curl, A. Laurence, unusual behaviour of female Summer Tanager, 442.
 Curlew, Eskimo, 101, 214.
 Hudsonian, 234, 372.
 Long-billed, 215.
 Curry, Haskell B., Louisiana Heron in Centre Co., Pennsylvania, 428.

- Curtler, Martin, the Lark Sparrow in Virginia, 366.
 Cygnus columbianus, 92, 371, 449.
 cygnus, 201.
 Cyphorinus lawrencei infuscatus, 250.
 Cypselus apus, 184.
 melba, 184.
- DACTYLORTYX thoracicus taylori, 143.
 Dafila acuta tzitzihua, 353.
 'Danske Fugle,' reviewed, 259.
 Darien, birds of, 301.
 Davidson, M. E. McLellan, notice of her 'New Birds from Chiriqui Provence Panama,' 139.
 Deconychura longicauda dariensis, 304.
 Deignan, H. G., notes on some Canal Zone birds, 125; the Jabiru in western Guatemala, 429.
 Delacour, J., notice of his 'Directions for Keeping and Breeding Birds,' 248; of his check-list of the birds of Russia, 264.
 Delaware, birds of, 206, 331.
 Delaware Valley Ornithological Club, annual meeting of, 264.
 Dendrocygna viduata, 298.
 Dendroica adelaidae, 8.
 caerulescens cairnsi, 200.
 cerulea, 450.
 coronata, 117.
 discolor, 233.
 dominica albilora, 197.
 d. dominica, 370.
 fusca, 450.
 magnolia, 117, 451.
 palmarum hypochrysea, 232.
 p. palmarum, 198, 364.
 pensylvanica, 229.
 pinus pinus, 117, 372.
 tigrina, 233.
 virens, 124.
- Dendroica v. virens, 369.
 v. waynei, 200.
 'Der Vogelzug,' reviewed, 257, 463.
 Dery, D. A., notice of his 'Migration of the Northern Sharp-tailed Grouse,' 250.
 Dickinson, F. R., see Bailey, A. M.
 Dingle, E. von S., Wilson's Warbler on the coast of South Carolina, 223.
 Dixon, Frederick J., obituary of, 153.
 Dixon, Joseph S., notice of his 'The Falcons of the Great Smokeys,' 379; see also, Wright, G. M.
 Dole, E. J., see Fortner, H. C.
 Dolichonyx oryzivorus, 450.
 Dominican Republic, birds of, 450.
 Dotterel, 203.
 Dove, Damara, 293.
 Eastern Ground, 197.
 Eastern Mourning, 218, 284-296.
 Ground, 369.
 Mourning, 452.
 Palm, 293.
 Western Mourning, 218.
 Dovekie, 105, 157, 196, 230, 325-349.
 Dowitcher, 152, 367, 444.
 Long-billed, 195.
 Dryobates pubescens pubescens, 199.
 villosus auduboni, 199.
 v. sanctorum, 437.
 Duck, Black, 452.
 Lesser Scaup, 367.
 Northern Eider, 245.
 Pintail, 353.
 Red-legged Black, 61, 199, 367.
 Ruddy, 372.
 Tufted, 202.
 Ducks, reduction in numbers of, 95.
 Dumetella crolinensis, 232, 301, 451.

- DuMont, Philip A., Old specimen of the Blue-faced Booby from Texas, 92; the Atlantic Kittiwake taken in central Iowa, 102; an old specimen of hybrid Flicker from Arkansas, 362; *Pedioecetes phasianellus kennicotti* revived, 432.
- Dunlin, 203.
- Dymond, John, Jr., obituary of, 260.
- Dysithamnus puncticeps puncticeps* 300.
- EAGLE, Bald, 35-53, 457
 Golden, 185, 192, 194, 355, 431, 457.
 Gray Sea, 202.
 Imperial, 185.
- Eagles, 137.
- East, Ben, notice of his 'The Homes of Birds,' 379.
- Edithornis silvestris*, 380.
- Edwards, Helen M., Bridled Tern, a new bird for Alabama, 105; Willow Thrush, a new bird for Alabama, 113; notes from Baldwin County, Alabama, 234, 368; Golden Plover, a new species for Alabama, 359.
- Egret, American, 94, 206, 350, 368, 370, 445.
 Snowy, 206.
- Egretta brevipes*, 206.
 thula thula, 206.
- Eider, American, 93, 193.
 King, 368.
 Northern, 245.
 Steller's, 202.
- Eifrig, C. W. G., an albino Short-eared Owl, 436; color of the iris of Brewer's Blackbird, 442.
- Elanoides forficatus forficatus*, 194, 234.
- Eliot, S. A., Jr., Wilson's Petrel banded at sea, 91; Snow Goose at Northampton, Mass., 96; Acadian and Nelson's Sparrows in the Connecticut Valley, 122; Turkey Vulture at Ludlow, Mass., 212; Western Palm Warbler in Massachusetts in spring, 364; European Goldfinch in western Massachusetts, 366; migration of Brunnich's Murre along shore, 435; notes from the coast of Connecticut, 444; see also, Bagg, Aaron C.,
 Elliott, Paul R., notice of his 'Temperature and Relative Humidity in Relation to the Ending of the Evening Song of Birds,' 379.
 Emberiza emberiza, 181.
 Empidonax albigularis australis, 300.
 minimus, 233.
 'Emu, The,' reviewed, 147, 256, 383, 463.
 England, birds of, 241.
 Erismatura jamaicensis rubida, 372.
 Erithaca rubecula, 181.
 Erolia testacea, 446.
 Esten, Sidney R., notes on the Prairie Chicken in Indiana, 356.
 Eudronias morinellus, 203.
 Euphagus cyanocephalus, 442.
 Euphonia sclateri, 8.
 Evermann, Barton W., obituary of, 465.
- FALCO *aesalon aesalon*, 203.
 columbarius bendirei, 356.
 c. columbarius, 233, 369, 447.
 fusco-caerulescens septentrionalis, 61.
 peregrinus anatum, 372, 447.
 p. peregrinus, 203.
 rusticolus candicans, 97, 202.
 r. obsoletus, 212.
 sparverius sparverius, 203.
 tinnunculus archeri, 148.

- Falcon, Aplomado, 61.
Peregrine, 203.
Fargo, William G., notice of his Red-breasted Mergansers on Tampa Bay, 139.
Feather pattern, 251.
Feather structure, 380.
Finch, Eastern Purple, 370.
Flamingo, 207, 460.
Fleetwood, Raymond J., Harris' Sparrow in Elkhart Co., Indiana, 225.
Flicker, Guatemalan, 437.
hybrid, 362.
Northern, 452.
'Flicker, The,' reviewed, 145, 253.
Flight, 374.
speed of, 92, 236, 309.
Florida caerulea, 232.
c. caerulea, 369.
Florida, birds of, 100, 207, 215, 225, 332, 370, 429, 460.
Flycatcher, Least, 233.
Scissor-tailed, 373.
Food, 373, 377.
Formicarius rufipectus rufipectus, 300.
Fortner, H. C., Smith, W. P. and Dole, E. J., review of their 'A List of Vermont Birds,' 456.
Foster, Frank B., Common Terns near Phoenixville, Pa., 359.
France, birds of, 242.
Franz-Joseph Land, birds of, 245.
Fraser, M. Abbott, 54-58.
Fratereula arctica arctica, 204.
Freer, Ruskin R., Bachman's Sparrow in the Virginia Blue Ridge, 365; Yellow-bellied Sapsucker breeding in the Virginia Blue Ridge, 437; nesting of the Prairie Horned Lark, in central Virginia, 437; summer records for the Virginia Piedmont, 448.
Friedmann, Herbert, notice of his 'Notes on the Abyssinian Red-capped Lark 139; of his 'Supposed Visual Function of the Nictitating Membrane of the Pigeon,' 139; of his 'Birds from Greater Namaqualand,' 248; reviews by,—Groebbel's 'Der Vogel,' 246; Siewert's 'Storche,' 247; Heinrich's 'Der Vogel Schnarch,' 247.
Friedmann, H. and Bowen, W. Wedgwood, notice of their 'Geographic Variation in the Yellow-billed Shrike,' 459.
Fringilla coelebs, 181.
Fuertes, L. A., and Brooks, Allan, notice of their 'Portraits of New England Birds,' 128.
Fulica americana americana, 369.
atra atra, 203.
Fulmar, Atlantic, 201.
Fulmarus glacialis glacialis, 201.
GABRIELSON, IRA N., an Oregon record of the Red-legged Kittiwake, 216; see also, Jewett, Stanley G.
Gadwall, 202.
Galbula rufoviridis heterogyna, 142.
Gallinula kiolooides, 249.
Gallinule, Purple, 99, 450.
Game Management, 468.
Ganier, A. F., notice of his 'Distributional List of the Birds of Tennessee,' 379; and 'Water Birds of Reelfoot Lake,' 379.
Gannet, 201, 205, 231, 367.
Gardner, C. B., English Sparrow apparently feeding on larvae of hornets, 223.
Gavia adamsi, 201.
immer immer, 201.
stellata, 230.
Gelochelidon nilotica aranea, 215, 299.
Georgia, birds of, 102, 103, 106, 227, 332, 427.

- Geothlypis trichas*, subsp., 232.
 t. brachidactyla, 118, 120, 200, 238.
 t. ignota, 200.
 t. insperata, 250.
Geranoaetus, 212.
 melanoleucus, 212.
 'Gerfaut, Le,' reviewed, 148, 258, 464.
 Gillespie, John A., Duck Hawk bathing and drinking, 98; song of the Gray-cheeked Thrush, 114.
 Gillespie, Mabel B., and John A., a Gannet in Delaware Co., Pa., 205.
Glaucionetta islandica, 193, 202.
 Gnatcatcher, Blue-gray, 369.
 Godwit, Black-tailed, 203.
 Hudsonian, 446.
 Marbled, 446.
 Golden-eye, Barrow's, 202.
 Goldfinch, 236.
 Eastern, 249.
 European, 366, 445.
 Goose, Barnacle, 202.
 Bean, 202.
 Blue, 193, 209, 353, 372, 450.
 Canada, 61.
 Gray Lag, 208.
 Greater Snow, 96, 352.
 Hutchins's, 61.
 Lesser Snow, 96, 193.
 White-fronted, 193, 202.
 Gorbunow, G., review of his 'Birds of Franz-Joseph Land,' 245.
 Goshawk, American, 92.
 Eastern, 194.
 Grackle, Purple, 452.
 Graham, Ritson, notice of his 'Changes in the Distribution of British Geese,' 379.
Grallaria flavirostris costaricensis, 300.
 Grayson, A. J., life of, 396-402.
 Grebe, Crested, 137.
 Holboell's, 201, 445.
 Grebe, Horned, 201.
 Mexican, 60.
 Greenfinch, 180.
 Greenland, birds of, 135, 381.
 Greenway, James C., Jr., notice of his 'Birds from Northwest Yunnan,' 379.
 Grey, Viscount, notice of his 'Canvas back Ducks in Northumberland,' 139.
 Griscom, Ludlow, notes on the Havemeyer collection of Central American birds 297-308; notes on the collecting trip of M. Abbott Fraser in Sonora and Chihuahua for William Brewster, 54-58; notice of his 'New Birds from Honduras and Mexico,' 248; see also, Bangs, Outram.
 Groebels, Franz, review of his 'Der Vogel,' 246.
 Grosbeak, Blue, 120, 445.
 Eastern Blue, 124.
 Pine, 192, 442.
 Rose-breasted, 370, 373, 451.
 Western Evening, 224.
 Gross, Alfred O., notice of his 'Heath Hen Report,' 31-32, 139.
 Guatemala, birds of, 120, 141, 429, 437.
 Guillemot, Black, 204.
Guiraca caerulea caerulea, 124, 445.
 c. eurhyncha, 120.
 Gull, Bonaparte's, 452.
 Franklin's, 196.
 Glaucous, 196.
 Great Black-backed, 204, 216, 217, 368.
 Herring, 103, 433.
 Ivory, 204.
 Kumlien's, 381.
 Laughing, 230, 360.
 Lesser Black-backed, 204.
 Little, 204, 434.
 Ring-billed, 103, 235, 369, 447.

- 'Gull, The,' reviewed, 145, 252.
Gyps fulvus, 184.
Gyr Falcon, 245.
 Black, 212.
 White, 97, 202.
- HABROPTILA wallacei*, 247.
 Hachisuka, Masauji, review of his
 'Birds of the Philippine Islands,'
 240.
Haematopus palliatus frazeri, 299.
 p. palliatus, 231.
Halcyon chelicuti, 142.
Haliaeetus albicilla, 202.
 Hallinan, Joseph E., obituary of,
 261.
 Halmahera, birds of, 247.
 Hamilton, W. J., Jr., a late nesting
 Waxwing in central New York,
 114; the importance of stoneflies
 in the winter food of certain
 passerine birds, 373.
Haplornis, 143.
 Harlee, H. L., Great Black-backed
 Gull on the South Carolina
 coast, 217.
 Harris, R. D., nest-building and
 egg-laying of the Prairie Horned
 Lark, 108.
 Harrison, T. H., and Hollom, P. A.
 D., notice of their 'The Crested
 Grebe Enquiry,' 137.
 Hartert, Ernst, notice of his 'Jour-
 neys to Morocco,' 459.
 Harwell, C. A., see Beatty, M. E.
 Havemeyer, Henry O., notes from
 Mountain Lake, Fla., 370.
 Hawk and Owl Society, notice of,
 156; notice of annual report, 457.
 Hawk, Broad-winged, 232, 355.
 Cooper's, 211.
 Duck, 233, 372, 379, 447.
 Eastern Pigeon, 369, 447.
 Eastern Sparrow, 203.
 Eastern Red-tailed, 356.
 Mexican Black, 61.
- Hawk. Pigeon, 233.
 Red-shouldered, 61.
 Sennett's White-tailed, 61.
 Western Pigeon, 356.
- Hawks, 457.
 Hays, Samuel P., Jr., see Reading,
 D. K.
Hedymeles ludoviciana, 370, 373,
 451.
 Heinrich, Gerd, review of his 're-
 port on an expedition to Celebes
 and Halmahera,' 247.
Heleodytes brunneicapillus seri,
 143.
Helmitherus vermivorus, 306.
Helodromas solitarius solitarius,
 357.
 Hendricks, G. Bartlett, Wilson's
 Phalarope, a new species for
 Alabama, 359; notes on the birds
 of Berkshire County, Mass., 366.
 Heron, Black-crowned Night, 93.
 Eastern Green, 61, 252, 351.
 Great Blue, 206, 427, 452.
 European, 201.
 Little Blue, 232, 360.
 Louisiana, 94, 428.
 Snowy, 350.
 Würdemann's, 370.
 Yellow-crowned Night, 61, 350.
 'Heron, The,' reviewed, 461.
*Herpsilochmus rufomarginatus ru-
 fomarginatus*, 323.
 Herrick, Francis H., daily life of the
 American Eagle: early phase
 (concluded), 35-53.
 Hersey, F. Seymore, 113; does the
 Robin ever lay white eggs, 113;
 notes on Tree Swallows and
 Bluebirds, 109.
Hesperiphona vespertina brooksi,
 224.
 Hiatt, Benjamin C., Avocets and
 Spoonbills on Merritts Island,
 Fla., 100.
 Hicks, Lawrence E., a Troupial

- collected at Columbus, Ohio, 224; the first appearance and spread of the breeding range of the European Starling in Ohio, 317-322; Brewster's Warbler in Ashtabula County, Ohio, 441; some breeding records for Ohio, 448.
- Hicks, Lawrence E., and Chapman, Floyd B., notice of their 'statistical Survey of Ohio Winter Bird Life,' 380.
- Hieraaëtus pennatus, 378.
- Himantopus mexicanus, 195.
- Hirundo erythrogaster, 32, 439.
 rufula, 182.
 rustica, 182.
 savignii, 182.
- Hix, George E., notice of his 'The Birds of Prey for Boy Scouts,' 248.
- Holland, William Jacob, obituary of, 260.
- Holt, Ernest G., recent records of the Flamingo in Florida, 207; Blue Goose in Alabama, 209; a record colony of Yellow-crowned Night Herons, 350; breeding of Glossy Ibis in La., 351; Golden Eagle in Louisiana, 355; notice of his Ibises and Flamingoes in Florida, 460.
- Honduras, birds of, 248.
- Hood, Juliette Mouron, the Audubon of the Pacific; A. J. Grayson, 396-402.
- Horizillas, 364.
- Houbara undulata, 185.
- Howard, Hildegard, notice of her 'Eagles of the Rancho La Brea,' 137.
- Hudson, George E., see Wiegers, Claude R.
- Hummingbird, Ruby-throated, 369, 408-413.
- Hydranassa tricolor ruficollis, 94, 428.
- Hydrobates pelagicus, 201.
- Hydroprogne caspia imperator, 230, 231.
- Hylocichla fuscescens salicicola, 113.
 minima aliciae, 114.
 ustulata ustulata, 197.
 u. swainsoni, 305, 372.
- Hylophilus ochraceiceps nelsoni, 305.
 viridiflavus, 306.
 v. pallescens, 139.
- Hypotaenidia philippensis pele-wensis, 380.
- IBIDORHYNCHA, 146.
- Ibis, Glossy, 351, 352.
 Scarlet, 460.
 Wood, 191, 193.
- 'Ibis, The,' reviewed, 146, 253, 382, 461.
- Icterus icterus, 224.
- Ictinia plumbea, 298.
- Illinois Audubon Bulletin, notice of, 380.
- Illinois, birds of, 371, 431.
- India, birds of, 241, 456.
- Indiana Audubon Yearbook, reviewed, 458.
- Indiana, birds of, 225, 356, 370, 436, 458.
- International Ornithological Congress, 467.
- Ionornis martinica, 99, 450.
- 'Iowa Bird Life,' reviewed, 145, 253, 461.
- Iowa, birds of, 102, 124.
- 'Iowa Ornithologist,' full sets of, 157.
- Ixobrychus exilis erythromelas, 323.
- JABIRU, 429.
- Jabiru mycteria, 429.
- Jackdaw, Common, 183.

- Jacobs, J. Warren, most southern Pennsylvania breeding record of the Bobolink, 119.
- Jaeger, Long-tailed, 204.
Parasitic, 196.
Pomarine, 196, 203.
- Jamieson, William, notice of his 'Birds of Kelvin,' 380.
- Japan, birds of, 136, 137, 144, 455.
- Japan, review of the 'Hand-List of the Japanese Birds, Revised,' 136.
- Jay, Canada, 111.
- Jays, 245.
- Jerusalem, birds of, 179-186.
- Jespersen, J., notice of his 'Observations on the Oceanic Birds of the Pacific and Adjacent Waters,' 380.
- Jewett, Stanley G., and Gabrielson, Ira N., the New Zealand Shearwater off the Columbia River, Oregon, 91.
- Jones, F. M., Long-eared Owl nesting near Bristol, Va., 106.
- Jones, Frank Morton, review of his 'Insect Coloration and the Relative Acceptability of Insects to Birds,' 377.
- Jones, Gordon W., partial albinism in *Cathartes aura septentrionalis*, 431; an apparently unnoticed trait of the Whip-poor-will, 436.
- Jourdain, F. C. R., on the palae-arctic element in the A. O. U. 'Check-List' (4th edition), 201-204.
- 'Journal für Ornithologie,' reviewed, 148, 257, 384, 463.
- Junco hyemalis hyemalis, 370, 449.
oreganus couesi, 226.
o. shufeldti, 123.
- Junco, Carolina, 122.
Shufeldt's, 123, 226.
Slate-colored, 370, 374, 449, 452.
- KANSAS, birds of, 211, 449.
- Kelso, John Edward Harry, obituary of, 154.
- Kelso, Leon, *Nyctale fasciata* of Bertoni, 435; the forgotten Georgia Owl, 106; notice of his 'Synopsis of the genus *Ciccaba*,' 139; notice of his 'Note on the Genus *Pulsatrix*,' 460; see also, Cottam, Clarence.
- Kendeigh, S. Charles, notice of his 'A Study of Merriam's Temperature Laws,' 130; notice of his 'Conservation of Bobwhite in Ohio,' 249.
- Kestrel, European, 185.
- Kingbird, Arkansas, 107, 197, 446.
Eastern, 32, 236, 452.
- Kingfisher, Amazon, 437.
Belted, 452.
Green, 437.
Ringed, 437.
- Kinglet, Eastern Golden-crowned, 232, 246, 374.
- Kirn, Albert J. B., Lead-colored Bush Tit near San Antonio, Tex., 221.
- Kite, Red, 185.
Black, 185.
Swallow-tailed, 192, 194, 234.
- Kittiwake, 191.
Atlantic, 102.
Red-legged, 216.
- Kloss, C. Boden, notice of his 'Sumatran Birds in the Museum at Buitenzorg,' of his 'Birds of Billiton Island,' 139.
- Knappen, Phoebe, feeding habits of the Turnstone, 99; birds eating sawfly larvae, 451; some bird enemies of *Odonata*, 452; see also, Cottam, Clarence.
- Knot, American, 444.
- Kobbe, Frederick William, eastern and western ducks, 95.
- 'Kocsag,' reviewed, 258.

- Korea, birds of, 244.
 Kuerzi, John and Richard, European Teal on Long Island, N. Y., 429.
 Kuhn, Otto, notice of his 'Physiology of Feather Growth,' 380.
 Kuroda, Nagamichi, notice of his 'Revision of the Types of Birds Described by Japanese Authors,' 137.
 LATOUCHE, J. D. D., review of his 'Birds of Eastern China,' 244, 378.
 Labrador, birds of, 127.
 Lalage banksiana, 380.
 Lanius ludovicianus ludovicianus, 364.
 l. migrans, 366, 445.
 Lark, Crested, 180.
 Desert, 180.
 Horned, 245.
 Prairie Horned, 108, 438.
 Larus argentatus smithsonianus, 103, 433.
 atricilla, 230, 360.
 delawarensis, 103, 235, 369, 447.
 fuscus graellsii, 204.
 hyperboreus, 196.
 marinus, 204, 216, 217, 368.
 minutus, 204, 434.
 pipixcan, 196.
 Laterallus, 142.
 viridis brunnescens, 142.
 'L'Oiseau' reviewed, 147, 256, 383.
 Leopold, Aldo, review of his 'Game Management,' 376, personal mention, 468.
 Leptotriccus sylviolus, 323.
 Lewis, John B., the Loggerhead Shrike an addition to the Virginia avifauna, 364.
 Ligurinus chloris, 180.
 Limnodromus griseus griseus, 299, 367, 459.
 Limnodromus g. hendersoni, 444, 459.
 g. fasciatus, 459.
 g. scolopaceus, 195.
 scolopaceus, 459.
 Limnodynastes swainsoni, 197.
 Limosa fedoa, 446.
 haemastica, 446.
 limosa limosa, 203.
 Limpkin, 370.
 Lincoln, Frederick C., Great Blue Heron in Cuba: a correction, 206; Eastern Mourning Dove migrating to Cuba, 218; Western Mourning Dove in central Mexico, 218.
 Linnaeus, see, Lönnberg, Einar.
 Linnet, European, 180.
 Lloyd, Hoyes, notice of his 'Birds of Ottawa,' 140.
 Lobipes lobatus, 203, 358, 372.
 Long, W. S., White-winged Scoters in eastern Kansas, 211; notes from eastern Kansas, 449.
 Longspur, Chestnut-collared, 123.
 Lapland, 124, 226, 245.
 Smith's, 371.
 Lönnberg, Einar, notice of his 'Linnaeus' Notes on Rudbeck's Lectures on Birds,' 380.
 Loon, Common, 201.
 Red-throated, 230.
 Yellow-billed, 201.
 Lophodytes cucullatus, 430.
 Lophophanes dichrous kangrae, 146.
 Lophortyx gambeli pembertonii, 143.
 Lophotriorchis kienerii, 378.
 Löppenthin, Bernt, review of his 'Birds of Northeastern Greenland,' 135.
 Louisiana, birds of, 226, 248, 350, 351, 353, 431, 439, 441.
 Loverage, Arthur, see Bangs, Outram.
 Lowe, Willoughby P., review of his

- 'The Trail that is Always New,' 131.
- Lowery, George H., Jr., Lapland Longspur: an addition to the Louisiana list, 226.
- Loxia curvirostra perena*, 198.
- leucoptera*, 198.
- McATEE, W. L., notice of his 'Need for Studies of Bird Control in California,' 140.
- McBride, John M., unusual roosting of the Chuck-will's-widow, 107.
- McIlhenny, E. A., Golden Eagle in Louisiana, 431; Barn Swallow breeding on the Gulf Coast of Mississippi, 439; Robins nesting in extreme southern Louisiana, 439.
- Magpies, 245.
- Maine, birds of, 220, 326, 353, 354.
- Malacolestes, 380.
- Malacopteron magnum, 364.
- Malacornis, 364.
- Manacus manacus gutturosus*, 324.
- Marden, Aaron, bird actions during eclipse of the sun, 125.
- Mareca penelope*, 354.
- Martin, Crag, 182.
- House, 459.
- Purple, 110, 128, 452.
- Sand, 182.
- Maryland, birds of, 209, 216, 332, 367, 443.
- Maslowski, K., notice of his 'Saw-Whet Owl in Cincinnati,' 249.
- Massachusetts, birds of, 93, 96, 104, 121, 122, 128, 208, 212, 226, 327, 359, 364, 366, 426, 435, 445.
- Mayr, Ernst, the type of *Egretta brevipes*, 206; notice of his, 'New Genera from Polynesia and Melanesia,' 380; 'New Birds from Micronesia,' 380; and 'Polynesian Flycatchers and a Revision of the Genus *Clytorhynchus*,' 380.
- Mayrornis, 143.
- Meadowlark, Eastern, 452.
- Western, 235.
- Megaceryle torquata torquata*, 437.
- Melanerpes erythrocephalus*, 367, 445.
- Melanitta deolandii*, 211.
- Melospiza georgiana*, 373.
- lincolni lincolni*, 373.
- melodia atlantica*, 200.
- m. melodia*, 226.
- Melzone rubricatum*, 381.
- Menegaux, A., review of his 'Les Oiseaux de France,' 242.
- Mentocrex*, 249.
- Merganser, American, 141, 430.
- Hooded, 430.
- Red-breasted, 444, 445.
- Mergus serrator*, 444, 445.
- Merlin, 203.
- Mexico, birds of, 54-58, 143, 218, 248, 249, 381.
- Meylan, Olivier, notice of his 'Avifauna of the Alps,' 141.
- Michigan, birds of, 107.
- Micrastur mirandollei*, 303.
- Micropalama himantopus*, 195, 230, 371, 372.
- 'Migrant, The' reviewed, 145, 252, 461.
- Migration, 30-34, 292, 455.
- Miller, Alden H., notice of his 'Molt and Plumage of *Phainopepla*,' 249.
- Miller, Loye, notice of his 'A Pleistocene Record of the Flammulated Screech Owl,' 380.
- Milvago chimachima cordatus*, 303.
- Milvus icinus*, 185.
- migrans*, 185.
- Mimus gilvus*, 125.
- polyglottos polyglottos*, 446.
- Minnesota, birds of, 123.
- Mionectes olivaceus olivaceus*, 301.
- Mirafrja javanica beaulieui*, 148.
- Mississippi, birds of, 439.

- Missouri, birds of, 107.
 Mockingbird, Eastern, 125, 446, 452.
Momotus mexicanus vanrossemi, 141.
Monasa flavivirostris, 304.
 minor, 304.
 morphoeus fidelis, 303.
 m. grandior, 303.
 m. pallescens, 303.
 m. peruana, 303.
 m. sclateri, 303.
 nigra, 304.
 nigrifrons, 304.
 Monk, Harry C., notice of his 'The Water Birds of Radnor Lake, Tenn.,' 381.
 Montana, birds of, 210, 362, 365.
Monticola cyaneus, 183.
 Moody, Arthur F., review of his 'Water Fowl and Game Birds in Captivity,' 133.
 Moore, Robert T., notice of his 'New Motmot from Mexico,' 141; of his 'New Race of *Aimophila carpalis*,' 249.
 Moris bassana, 201, 205, 231, 367.
 Morrison, John L., see Wieggers, Claude R.
Motacilla alba, 179.
 Mousley, Henry, bird actions during eclipse of the sun, 125; notice of his 'Notes on the Birds of Quebec,' 141; of his 'Home Life of the Northern Yellowthroat, and of the Goldfinch,' 249.
 Mullen, Robert A., speed of racing pigeons, 374.
 Munro, J. A., notice of his 'Food of the American Merganser,' 141.
 Murie, Adolph, Chickadee occupies Robin nest, 111.
 Murphy, Charles B. G., see Rockefeller, J. Sterling.
 Murphy, Robert Cushman, a probable record of the Eskimo Curlew at Montauk Point, N. Y., 101; notice of his 'August on Fire Island,' 460.
 Murphy, Robert Cushman and Vogt, William, the Dovekie influx of 1932, 325-349.
 Murray, J. J., Northern Yellowthroat at Lexington, Va., 118; additions to the Virginia avifauna since 1890, 190-200; American Egret in Western Virginia, 206; notes from western North Carolina, 232; teals resting on plowed ground, 354; winter notes from Back Bay Virginia and North Carolina, 368; a late nesting colony of Cliff Swallows at Lexington, Va., 437; notes from the Virginia mountains, 447.
 Murre, Atlantic, 204.
 Brunnich's, 196, 217, 360, 435.
 'Murrelet, The,' reviewed, 144.
Muscivora forficata, 373.
 tyrannus, 125.
Mycteria americana, 193.
Myiochanes brachytarsus brachytarsus, 301.
Myiophobus fasciatus furfurosus, 305.
Myrmeciza exul occidentalis, 304.
Myrmotherula surinamensis pacifica, 301.
 NAUMBERG, ELSIE M. B., notice of her 'A Study of *Zenaida auriculata*,' 460.
 'Nebraska Bird Review,' noticed, 253.
 Nebraska, birds of, 221, 253.
 Nelson, A. L., Golden-winged Warbler feeding on larvae of *Talponia plummeriana*, 440.
 Nelson, E. W., notice of his 'New Subspecies of *Colinus nigrogularis*,' 141.
Neophron percnopterus, 184.

- Neospingus speculiferus*, 8.
 Netherlands Ornithological Club,
 'Orgaan,' reviewed, 259.
Nettion crecca, 202, 429, 445.
 formosum, 97.
 New Brunswick, birds of, 379.
 New Hampshire, birds of, 212, 326,
 354, 358.
 New Jersey, birds of, 97, 100, 101,
 229, 330, 352, 358, 437.
 New York, birds of, 101, 114, 117,
 123, 134, 220, 227, 328, 365, 429,
 433, 434, 445, 460.
 New Zealand, birds of, 243.
 'News from the Bird Banders,'
 noticed, 145.
 Nice, Margaret M., female Quail
 "Bobwhiting," 97; the Cowbird as
 bait for the capture of foster
 parents, 120.
 Nichols, Charles K., Greater Snow
 Goose at Troy Meadows, N. J.,
 352.
 Nicholson, Wray H., Roseate Spoon-
 bill and White Pelican in Brevard
 Co., Florida, 429.
 Niedrach, R. J. see Bailey, A. M.,
 Nighthawk, 452.
Niltava smithi, 381.
 davidi lychnis, 381.
 williamina, 381.
 Nonpareil, 121.
 North Carolina, birds of, 116, 117,
 122, 225, 231, 232, 233, 332, 353,
 368.
 Norton, Arthur H., the Long-billed
 Marsh Wren in Maine, 113; a
 black gyrfalcon from New Hamp-
 shire, 212; the Barn Owl in
 Maine, 220; the Pintail Duck
 wintering in Maine, 353; the
 European Widgeon again in
 Maine, 354.
Notharchus tectus subtectus, 300.
 Nova Scotia, birds of, 326, 379.
Novipulsatrix, 460.
Numenius americanus americanus,
 215.
 borealis, 101.
Nuthatch, Red-breasted, 112, 232,
 235.
Nyctale fasciata, 435.
Nyctanassa violacea violacea, 61.
Nycticorax nycticorax hoactli, 303.
Nyroca affinis, 367, 448.
 americana, 210, 445.
 fuligula, 202.
 OBERHOLSER, HARRY C., Robert
 Ridgway: a memorial apprecia-
 tion, 159-169; notice of his 'New
 Birds from Oregon,' 141.
Oberholseria chlorura, 198.
Oceanites oceanicus, 193.
Oceanodroma leucorhoa leucorhoa,
 426.
Odontophorus capistratus, 142, 250.
 loricatus, 250.
 veraguensis, 298.
 smithians, 298.
 Odum, Eugene P., a Brewster's
 Warbler in North Carolina, 116;
 spring occurrence of the Tennes-
 see Warbler in North Carolina,
 117.
Oedinemus bistriatus bistriatus,
 299.
 Ohio, birds of, 116, 224, 234, 249,
 317, 362, 380, 441, 443, 448.
 Oklahoma, birds of, 373.
 Old-squaw, 202.
Olor columbianus, 208.
 Ontario, birds of, 94, 250.
 'Oölogist, The,' reviewed, 145, 251,
 461.
 'Oölogists' Record, The,' reviewed,
 147, 255, 426.
 Oort, E. D. von, notice of his 'Bird
 Banding at Leiden,' 250.
Ophrydornis, 364.
Oporornis agilis, 446.
 philadelphia, 233.

- Oregon, birds of, 91, 141, 216.
 'Ornis Fennica,' reviewed, 259.
 'Ornithologische Beobachter, Der,'
 reviewed, 148, 258, 464.
 'Ornithologische Monatsberichte,'
 reviewed, 149, 257, 384, 463.
Ortalis guttata subaffinis, 142.
Osprey, 373, 450.
Otocoris alpestris praticola, 108,
 437.
Otus trichopsis mesamericanus, 143.
 Owl, Barn, 220.
 Flammulated Screech, 380.
 Georgia, 106.
 Great Gray, 436.
 Great Horned, 220, 372.
 Long-eared, 105, 436.
 Saw-whet, 227, 249, 361, 368.
 Short-eared, 184, 436.
 Snowy, 245.
 Southern Little, 184.
 Owls, 457.
Oystercatcher, American, 148, 231.
- PACHYRAMPHUS albogriseus*, 304.
 Pacific, birds of the south, 244.
Pagolla wilsonia beldingi, 299.
Pagophila alba, 204.
 Palmer, T. S., fiftieth stated
 meeting of the A. O. U., 64-79;
 report of the secretary, 80-84;
 report of the committee on
 biography and bibliography, 84-
 86; obituaries of John E. H.
 Kelso, 154; Solon R. Towne, 154;
 John Wiley Atkins, 153; John
 Dymond Jr., 260; Joseph E.
 Hallinen, 261; and Barton, W.
 Everman, 465.
 Palmgren, Pontius, review of his
 papers on animal ecology, 245.
 Panama, birds of, 30, 125, 139, 301.
Pandion haliaetus carolinensis, 373,
 450.
Paroquet, Carolina, 192.
Partridge, Red-legged, 185.
- Parus atricapillus kleinschmidtii*,
 146.
 a. borealis, 246.
 cristatus, 246.
 major, 181.
Passer domesticus domesticus, 181,
 451.
Passerculus princeps, 232.
 sandwichensis alaudinus, 250.
 s. campestris, 250.
 s. savanna, 229, 236, 373, 443.
Passerella iliaca iliaca, 365.
Passerherbulus henslowi henslowi,
 236, 373.
 h. susurrans, 225, 228, 230.
 maritimus subs., 62.
Passerina ciris ciris, 234.
 cyanea, 370.
 Pearson, T. Gilbert, notice of his
 'The Large Wading Birds,' 133;
 of his 'Crows, Magpies and Jays,'
 245.
Pedioecetes phasianellus campe-
stris, 432.
 p. columbianus, 432.
 p. kennicottii, 432.
 p. phasianellus, 250, 432.
Pelecanus erythrorhynchos, 205,
 429, 458.
Pelican, White, 205, 429, 458.
Pelidna alpina alpina, 203.
 a. sakhalina, 444.
 Pell, S. Morris, Gray Lag Goose in
 Massachusetts, 208.
Peltops montanus, 149.
Penelope argyrotis olivaceiceps, 142
 jacuacu orienticola, 142.
 Pennsylvania, birds of, 93, 97, 119,
 205, 230, 331, 359, 428.
Penthestes atricapillus septentrio-
nalis, 111.
Perisoreus c. canadensis, 111.
Perissotriccus atricapillus, 301.
 Perkins, S. E., III, notes from
 Dorchester, Md., 367; Indiana
 specimen of Great Gray Owl, 436.

- Pernis apivorus*, 185.
Perry, George L., Seaside Sparrow at Revere, Mass., 121.
Peru, birds of, 460.
Peters, James L., Outram Bangs, 1863-1932, 265-274; notice of his 'New Genera and Subspecies of Rails,' 249; of his 'Laterallus antedates *Creciscus*,' 142.
Petrel, Black-capped, 193.
 Audubon's, 193.
 Leach's, 426.
 Wilson's, 91.
Petrochelidon albifrons albifrons, 300, 439.
Pewee, Wood, 174-178.
Phaeopus hudsonicus, 234, 372.
Phainopepla nitens, 249.
Phalacrocorax auritus auritus, 230, 234, 434, 444.
 a. *floridanus*, 61.
Phalarope, Northern, 203, 358, 372.
 Red, 196, 230, 358.
 Wilson's, 359, 446.
Phalaropus fulicarius, 196, 230.
Phasianus colchicus torquatus, 195.
 v. *versicolor*, 455.
Pheasant, Ring-necked, 195.
Pheugopedius rutilus hyperythrus, 305.
Philippines, birds of the, 240.
Phillips, Charles L., the Clay-colored Sparrow in Florida, 225.
Philomachus pugnax, 101, 195.
Philydor atricapillus, 323.
 lichtensteini, 323.
Phloeotomus pileatus abieticola, 228.
Phylloscartes ventralis flavovirens, 305.
Phylloscopus minor, 182.
Picoides arcticus, 228.
Pigeon, Carrier, 374.
 Passenger, 138, 459.
Pike, Eugene R., Turkey Vulture at Chicago, 431.
Pilherodius pileatus, 303.
Pinarolestes, 380.
Pinicola enucleator leucura, 442.
Pipile cumanensis naumbergae, 142.
Pipilo erythrophthalmus erythrophthalmus, 233.
Pipit, American, 124.
Pipra erythrocephala erythrocephala, 304.
Piranga erythromelas, 367, 448.
 rubra rubra, 442.
Pisobia bairdi, 195, 230, 372, 433, 446.
 fuscicollis, 195, 444.
 melanotos, 369.
 minutilla, 231, 368.
Plath, Karl, molt of the Nonpareil, 121.
Platypsaris homochrous homochrous, 305.
Plautus impennis, 204.
Plectrophenax nivalis nivalis, 227.
Plegadis falcinellus falcinellus, 351.
Pleske, Th., dates in Pleske's 'Birds of the Tundra,' 151.
Plover, American Golden, 124.
 Belted Piping, 191.
 Black-bellied, 231, 371, 444.
 Cuban Snowy, 234.
 European Golden, 203.
 Golden, 99, 359, 420-425.
 Little Ringed, 203.
 Mountain, 248.
 Piping, 215, 444, 448.
 Ringed, 203.
 Ring-necked, 444.
 Upland, 228, 450.
Pluvialis apricaria apricaria, 203.
 dominica dominica, 124, 359.
Polioptila caerulea caerulea, 369.
 melanura curtata, 143.
Polynesia, birds of, 380.
Polysticta stelleri, 202.
Poocetes gramineus gramineus, 448.
Poole, Earl L., a Pennsylvania

- specimen of the White Gyrfalcon, 97; water birds observed at Reading, Pa., 230.
- Portenko, L., notice of his 'Avifauna of Novaya Zemlaya,' 142; of his new subspecies of Palaearctic birds, 142.
- Porto Rico, birds of, 7.
- Porzana marginalis, 249.
 albicollis typhoea, 249.
- Prairie Chicken, 124, 191, 356.
- Presnall, C. A., see Beatty, M. E.
- Psaltiriparus minimus plumbeus, 221.
- Pseudocalyptomena graueri, 23-29.
- Pseudociccaba, 139.
- Ptarmigan, 245.
- Pterodroma hasitata, 193.
- Puffin, Atlantic, 204.
- Puffinus griseus, 192.
 l. lherminieri, 193.
 puffinus puffinus, 201.
- Pulsatrix, 460.
 sharpei, 460.
- Pumyea, Nelson D. W., Prairie Horned Lark breeding in central New Jersey, 437.
- Pycnonotus xanthopygos, 183.
- Pyrrhuloxia sinuata texana, 63.
- Pyrrhuloxia, Texas, 63.
- QUEBEC, birds of, 250, 326.
- Querquedula cyanoptera, 210.
 discors, 354, 370.
- RACEY, KENNETH, White Pelican in British Columbia, 205.
- Rail, Clapper, 62.
 Sora, 121.
 Virginia, 62, 121, 369.
 Yellow, 121, 446.
- Rallus limicola limicola, 62, 369.
 longirostris subs., 62.
- Ramphocelus dimidiatus albirostris, 307.
 d. dimidiatus, 306.
- Ramphocelus d. isthmicus, 307.
 d. limatus, 308.
- Rand, A. L., testicular asymmetry in the Madagascar Coucal, 219.
- Randall, T. E., notice of his 'Breeding Birds of the Athabasca District,' 249.
- Raven, 253.
 Northern, 447.
 White-necked, 62.
- 'Raven, The,' reviewed, 145, 461.
- Reading, D. K. and Hayes, Samuel P. Jr., notes on the nesting and feeding of a pair of Black-throated Green Warblers, 403-407.
- Rectes tenebrosus, 380.
- Recurvirostra americana, 100, 195.
- Redhead, 210, 445.
- Redpoll, Common, 198, 365.
 Hoary, 365.
- Redstart, 441.
 Black, 180.
- Regulus satrapa satrapa, 232.
- Reinarda squamata semota, 249, 381.
- Rhinoptynx clamator clamator, 300.
- Rhipidura lessoni, 143.
- Rhode Island, birds of, 327.
- Rich, Marc C., Brunnich's Murre on Staten Island, N. Y., 217; Great Crested Flycatcher in New Jersey in November, 221; a late migration of Fox Sparrows, 365.
- Richardson, Hubert, notice of his 'Henslow's Sparrow at Toronto,' 250.
- Richmond, Charles Wallace, In Memoriam, 1-22.
- Richmondia cardinalis townsendi, 143.
- Ridgway, Robert, a memorial appreciation, 159-169.
- Riley, J. H., the names of two genera of Timaline birds, 363;

- notice of his, 'New Swift from Venezuela,' 249; of his 'Notes on Niltava smithi,' 381.
- Rissa brevirostris, 216.
- tridactyla tridactyla, 102.
- Risser, Alden F., Chestnut-collared Longspur in eastern Minnesota, 123.
- Robin, Eastern, 113, 221, 236, 452.
- Southern, 199, 439.
- Robin Redbreast, 181.
- Rockefeller, J. Sterling, and Murphy, Charles B. G., the rediscovery of Calyptomena, 23-29.
- Rook, 204, 459.
- Syrian, 183.
- Rostrhamus sociabilis plumbeus, 298.
- Rowan, William, notice of his 'Experiments in Bird Migration,' 249; correction to his paper on the Dowitcher, 152.
- Ruff, 101, 195.
- Ruticilla titys, 180.
- Rynchops nigra, 446.
- 'ST. LOUIS BIRD CLUB BULLETIN,' noticed, 146, 253.
- Sakalin, birds of, 244.
- Sanderling, 203, 231, 452.
- Sandpiper, Baird's, 195, 230, 372, 433, 446.
- Bonaparte's, 245.
- Buff-breasted, 195.
- Curlew, 446.
- Eastern Solitary, 62.
- Least, 231, 359, 368.
- Pectoral, 369.
- Red-backed, 444.
- Solitary, 357.
- Stilt, 195, 230, 371, 372.
- White-rumped, 195, 444.
- Sapsucker, Yellow-bellied, 372, 437.
- Saucerottia niveoventer, 301.
- Saunders, Aretas A., the Purple Gallinule in Connecticut, 99; the Black Tern in Connecticut in spring, 105.
- Saunders, George B., Starlings wintering in central and western Texas, 440.
- Saurothera vieilloti, 8.
- Saxicola melanoleuca, 180.
- lugens, 180.
- Scardafella inca dialeucos, 300.
- Scaup, Lesser, 448.
- Schaanning, H. Th. L., notice of his 'Contribution to the Bird Fauna of East Greenland' and 'The Bird Fauna of Jan Mayen,' 381.
- Sclerurus mexicanus pullus, 301.
- Scoter, White-winged, 211.
- Scotiaptex nebulosa nebulosa, 436.
- Seedeater, Sharpe's, 63.
- Setaria, 364.
- Setophaga ruticilla, 441.
- Sharp, Barton L., nesting of the Prairie Horned Lark in Pennsylvania, 437.
- Shaw, Tsen-Hwang, notice of his 'Notes on Passerine Birds from Szechwan,' 142.
- Shearwater, Audubon's, 193.
- Manx, 201.
- New Zealand, 91.
- Sooty, 192.
- Shelford, V. E., review of his 'Life Zones and the Failure of Temperature Summing,' 130.
- Shelley, Lewis O., Canada Jay in Cheshire County, N. H., 111; Song Sparrow in the stomach of a frog, 123; Blue-winged Teal breeding in Cheshire County, N. H., 354; some feeding habits of the Solitary Sandpiper, 357; a Willet in New Hampshire, 358.
- Sheppard, R. W., notes on the birds of Jerusalem, 179-186.
- Shoveller, 451.
- Shrike, Loggerhead, 192, 364.
- Migrant, 366, 445.

- Siewert, Horst, review of his 'Storche,' 247.
- Sirystes sibilator albogriseus*, 305.
- Sitta canadensis*, 112, 232, 235.
 himalayensis whistleri, 148.
- Skimmer, Black, 446.
- Skutch, Alexander F., Blue Grosbeak breeding in Guatemala, 120; a male Kingfisher incubating at night, 437; male Woodpeckers incubating at night, 437.
- Smaragdolanus pulchellus viridiceps*, 305.
- Smith, Wendell P., some observations on the nesting habits of the Barn Swallow, 414-419; see also, Fortner, H. C.
- Somateria mollissima borealis*, 245.
 m. dresseri, 93, 193.
 spectabilis, 368.
- Song, 379, 453, 459.
- 'South Australian Ornithologist' reviewed, 147, 256, 463.
- South Carolina, birds of, 99, 102, 104, 117, 208, 209, 210, 215, 217, 223, 226, 248, 332, 358, 360.
- Sparrow, Acadian, 122.
 Atlantic Song, 200.
 Bachman's, 198, 365.
 Cassin's, 62.
 Chipping, 236.
 Clay-colored, 225.
 Eastern Henslow's, 225, 228, 230, 250, 373.
 Eastern Lark, 121, 366, 446.
 Eastern Savannah, 229, 236, 443.
 Eastern Song, 120, 123, 226, 374.
 Eastern Vesper, 236, 448.
 English, 223, 451, 452.
 Fox, 365.
 Gambel's, 443.
 Grasshopper, 373.
 Harris's, 225.
 House, 181.
- Sparrow, Ipswich, 232.
 Lincoln's 373.
 Nelson's, 122, 198.
 Savannah, 250, 373.
 Seaside, 62, 121.
 Swamp, 373.
 Tree, 373.
 Western Henslow's, 236.
 White-throated, 448.
- Spatula clypeata*, 451.
- Speirs, J. M., notice of his 'Notes on the Henslow Sparrow,' 250.
- Sphyrapicus varius varius*, 372, 437.
- Spizaetus*, 378.
- Spizella pallida*, 225.
- Spodiornis barilesensis*, 139.
- Spoonbill, Roseate, 100, 429.
- Sporadinus maugaei*, 8.
- Sporophila moreletii sharpei*, 63.
- Sprunt, Alexander, Jr., the Golden Plover again in South Carolina; the Magnolia Warbler on the South Carolina coast, 117; late nesting of the Carolina Junco, 122; the Whistling Swan in South Carolina, 208; third occurrence of the Brant in South Carolina, 209; the Cinnamon Teal in South Carolina, 210; winter range of the Long-billed Curlew and Piping Plover, 215; additional notes from the North Carolina mountains, 232; the Glossy Ibis in Georgia, 352; second occurrence of Northern Phalarope in South Carolina, 358.
- Squatarola squatarola*, 231, 371, 444.
- Starling, 181, 197, 211, 221, 317-322, 355, 363, 369, 372, 373, 440, 452.
- Stead, Edgar F., review of his 'Life Histories of New Zealand, Birds,' 243.
- Steganopus tricolor*, 359, 446.

- Stelgidopteryx ruficollis, serripennis, 362.
- Stercorarius longicaudus, 204.
 parasiticus, 196.
 pomerinus, 196, 203.
- Sterna anathæetus melanoptera, 104, 105.
 dougalli dougalli, 204, 434.
 forsteri, 104, 235, 368.
 hirundo hirundo, 434, 444.
- Stevenson, James and Brodtkorb, Pierce, bird notes from the Chicago Area, 371.
- Stewart, Paul A., Gambel's Sparrow in Ohio, 443.
- Stigmatopelia senegalensis, 293.
- Stilt, Black-necked, 195.
- Stone, Clarence F., winter occurrence of warblers in northern Steuben Co., N. Y., 117; Shufeldt's Junco in Steuben Co., N. Y., 123; notes from northern Steuben Co., N. Y., 227.
- Stone, Witmer, In Memorium: Charles Wallace Richmond, 1-22; Blue Goose in Maryland, 209; obituary of Dr. William J. Holland, 260; Northern Phalarope on the New Jersey coast, 358.
- Stoneham, H. F., notice of his 'Races of Halcyon chelicuti,' 142.
- Stoner, Dayton, review of his 'Ornithology of the Oneida Lake Region,' 134.
- Stoner, Emerson A., a collection showing food eaten by birds, 187-189.
- Stork, Black, 247.
 White, 186, 247.
- Street, J. Fletcher, review of his 'Brief Bird Biographies,' 129.
- Streptopelia damarensis, 293.
- Strix georgica, 106.
 rufipes chacoensis, 435.
 r. rufipes, 435.
- Strix varia alleni, 106.
 v. georgica, 106.
- Sturnella neglecta, 235.
- Sturnus vulgaris vulgaris, 181, 197, 317-322, 369, 372, 373, 440.
- Sula dactylatra dactylatra, 92.
- Sumatra, birds of, 139.
- Svihla, Arthur, an abnormally colored Western Evening Grosbeak, 224.
- Swallow, Barn, 32, 236, 414-419, 439, 452.
 Chimney, 182.
 Cliff, 439.
 European, 245.
 Oriental, 181.
 Red-rumped, 182.
 Rough-winged, 362.
 Tree, 109, 236, 452.
- Swallows, 459.
- Swan, Whistling, 92, 208, 371, 449.
 Whooper, 201.
- Swann, H. Kirke, review of his 'A Monograph of the Birds of Prey,' 378.
- Swarth, Harry S., personal mention, 468.
- Swift, Chimney, 369.
 European, 184.
 White-bellied, 184.
- Symplectes amaurocephalus analogus, 142.
- Synallaxis albescens hypoleucus, 304.
- Syrmaticus soemmerringii, 455.
- TACHYPHONUS rufus, 300.
- Taka-tsukasa, Prince, review of his 'The Birds of Nippon,' 244, 455.
- Tanager, Summer, 442.
 Scarlet, 367, 448.
- Tangavivus aeneus involucratus, 306.
- Taverner, P. A., Purple Martins gathering leaves, 110; notice of his 'A Study of the Canadian Savanna Sparrows,' 250; notice

- of his 'A Study of Kumlien's Gull,' 381.
- Teal, Baikal, 97.
- Blue-winged, 370, 354.
- Cinnamon, 210.
- European, 202, 429, 445.
- Green-winged, 354.
- Telmatodytes palustris dissaepetus, 112, 197, 235.
- Tennessee, birds of, 379, 381.
- Tephrocorys cinerea fuertesi, 139.
- Tern, American Caspian, 230, 231.
- Arctic, 148.
- Black, 105, 359.
- Bridled, 104, 105.
- Cabot's, 196.
- Common, 359, 434, 444, 452.
- Forster's, 104, 235, 368.
- Gull-billed, 215.
- Roseate, 204, 434.
- Sandwich, 148.
- White-winged, 204.
- Test, Louis A. and Frederick H., notes from Tippecanoe Co., Indiana, 370.
- Texas, birds of, 59-63, 92, 221, 250, 373, 440.
- Textor cucullatus cucullatus, 450.
- Thalasseus sandvicensis acuflavida, 196.
- Thalassogeron chlororhynchos, 201.
- Thamnophilus, 460.
- Thompson, Ben H., review of his 'History and Present Status of the Breeding Colonies of the White Pelican,' 458; see also, Wright, G. M.
- Thrasher, Brown, 452.
- Thryophilus longirostris longirostris, 324.
- modestus elutus, 305.
- rufalbus castanonotus, 305.
- Thryothorus ludovicianus ludovicianus, 228, 445.
- Thrush, Blue Rock, 183.
- Gray-cheeked, 114.
- Thrush, Olive-backed, 372.
- Russet-backed, 197.
- Willow, 113.
- Thyellodroma bulleri, 91.
- Ticehurst, Claud B., review of his 'History of the Birds of Suffolk,' 241.
- Timalia poiocephala, 364.
- Tit, British Willow, 146.
- Great, 181.
- Todd, W. E. C., the races of the White-eyed Vireo, 115; notice of his 'Seven New South American Birds,' 142; of his 'A New Weaver-bird from Cameroun,' 142; of his 'Critical Notes on the Cracidae,' 142; of his 'New Name for Odontophorus capistratus,' 250.
- Todirostrum nigriceps, 300.
- Tomkins, Ivan R., the Western Willet in winter in Georgia and South Carolina, 102; Ring-billed and Herring Gulls at the Savannah River mouth in July and August, 103; the Yellow-legs wintering in South Carolina, 215; an Eastern Snow Bunting from Georgia, 227.
- Topsell, Edward, account of his 'Fowles of Heauen,' 275-283.
- Totanus flavipes, 215.
- melanoleucus, 231.
- Towhee, Green-tailed, 198.
- Red-eyed, 233.
- Towne, Solon Rodney, obituary of, 154.
- Townsend, Charles W., winking of the Dovekie, 105; sight records of the Eskimo Curlew, 214; Brunnich's Murres destroyed by storm, 217; Shufeldt's Junco in the East, 226; Broad-winged Hawk and Starlings, 355.
- Townsend, Charles W., and Allen

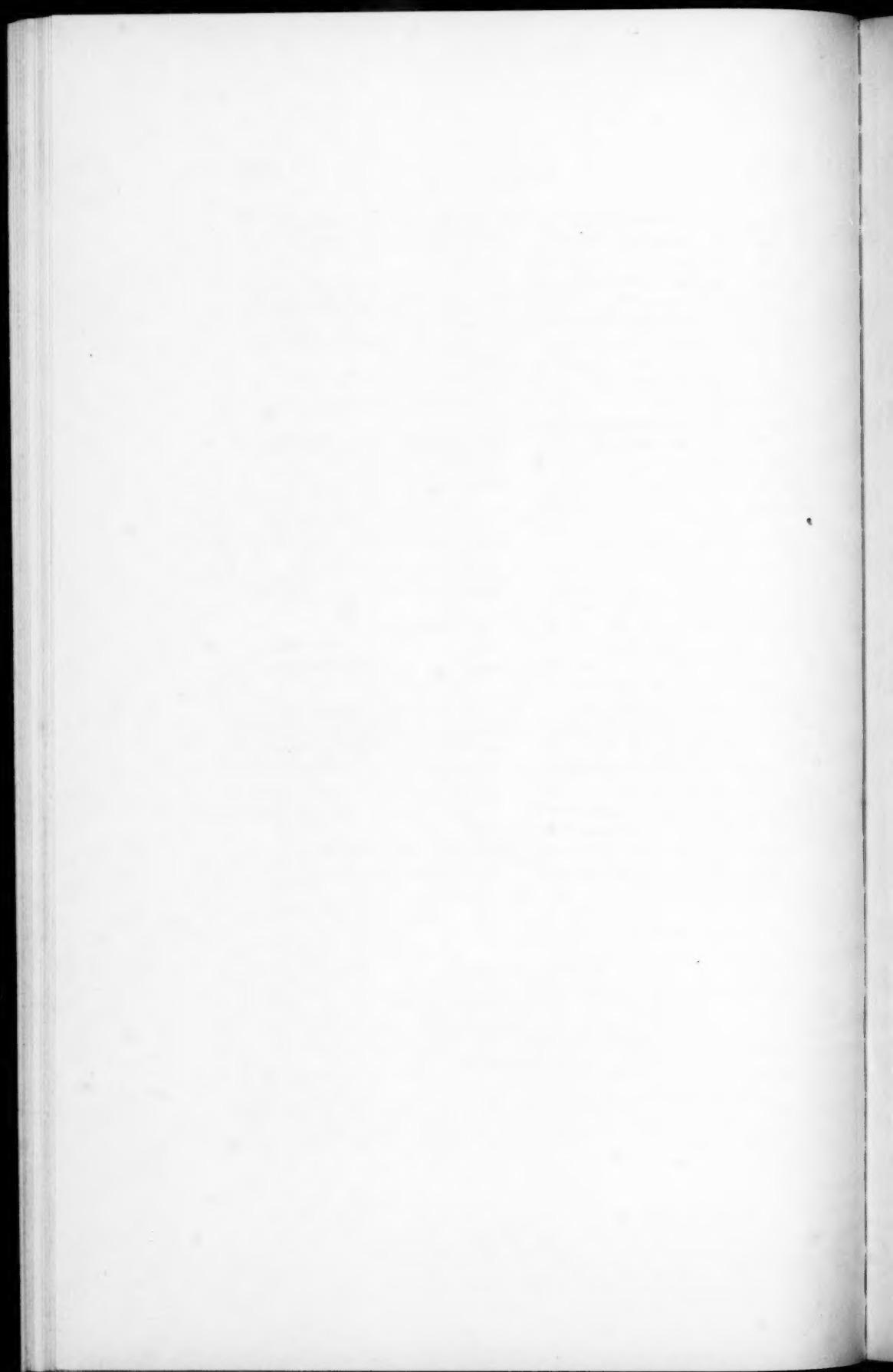
- Francis H., Leach's Petrel breeding in Massachusetts, 426.
- Townson, John, American Egret in eastern Ontario, 94.
- Trautman, Milton B., notice of his 'Revised List of the Birds of Ohio,' 142; some recent Ohio records, 234.
- Tringa solitaria solitaria*, 62.
s. cinnamomea, 299.
- Troglodytes aedon parkmani*, 197.
musculus bonariae, 324.
- Trogon ambiguus*, 124.
strigilatus chionurus, 301.
- Trogon, Coppery-tailed, 124.
- Troupial, 224.
- Tryngites subruficollis*, 195.
- Turdus migratorius achrusterus*, 199.
- Turnstone, 99, 118, 367.
European, 203.
Ruddy, 231, 444, 452.
- Tyler, Winsor M., the Starling as a mimic, 363.
- Tympanuchus cupido americanus*, 124, 356.
- Tyrannulus elatus panamensis*, 305.
- Tyrannus tyrannus*, 32.
verticalis, 107, 197, 446.
- Tyrant, Fork-tailed, 125.
- Tyto alba pratincola*, 220.
- ULULA fasciata, 436.
- Underdown, C. Eliot, notes on some birds from Santa Catharina, Brazil, 323.
- University of Wisconsin chair of game management, 468.
- Uria aalge aalge*, 204.
lomvia lomvia, 196, 217, 360, 435.
- Urner, Charles A., Avocets in New Jersey, 100; the Ruff in New Jersey, 101; the voice of the Golden Plover, 420-425.
- Urubitinga anthracina anthracina*, 61.
- VAN ROSSEM, A. J., notice of his 'Avifauna of Tiburon Island, Mexico,' 143; of his 'El Salvador Races of *Dactylortyx thoracicus*,' 143; of his 'Southern Race of the Spotted Screech Owl,' 143; of his 'A Northern Race of *Melzone rubricatum*,' 381.
- van Someren, Vernon D., notice of his 'On the Nesting of the Blackbird,' 381.
- Van Tyne, Josselyn, the Arkansas Kingbird in Michigan, 107; notice of his 'Some Birds of the Rio Grande Delta, 250; and 'A New Vireo from British Honduras,' 250.
- Venezuela, birds of, 249.
- Vermivora bachmani*, 197.
chrysoptera, 116, 441.
leucobronchialis, 116, 441.
pinus, 116, 306, 441.
peregrina, 117, 232.
- Vermont, birds of, 456.
- Vireo griseus*, 115.
g. noveboracensis, 115.
g. maynardi, 115.
g. micrus, 115.
g. bermudianus, 116.
latimeri, 8, 9.
olivacea, 451.
philadelphicus, 371.
solitarius notius, 250.
- Vireo, Philadelphia, 371.
Red-eyed, 451.
White-eyed, 115.
- Virginia, birds of, 105, 118, 189-200, 206, 332, 364, 365, 366, 368, 437, 439, 447, 448.
- Virginia Ornithological Society, annual meeting of, 264.
- 'Vögel ferner Länder,' noticed, 150, 258.

- 'Vogelzug, Der,' reviewed, 149, 463.
 Vogt, William, notes from Jones Beach, N. Y., 445.
 Vulture, Black, 194.
 Egyptian, 184.
 Griffon, 184.
 Turkey, 30-34, 212, 229, 431, 452.
- WAGTAIL, White, 179.
- Walsh, Lester L., summering Eiders off the Massachusetts coast, 93; notes from southern Arizona, 124.
- Warbler, Bachman's, 197.
 Blackburnian, 450.
 Black-throated Green, 124, 369, 403-407.
 Brewster's, 116, 192.
 Blue-winged, 116.
 Cairns', 200.
 Cape May, 222, 233.
 Cerulean, 450.
 Chestnut-sided, 229.
 Connecticut, 446.
 Gray-backed, 182.
 Golden-winged, 116, 441.
 Magnolia, 117, 451.
 Mourning, 117, 233.
 Myrtle, 117.
 Northern Parula, 199.
 Pine, 117, 372.
 Prairie, 233.
 Rufous, 182.
 Sycamore, 197.
 Swainson's, 197.
 Tennessee, 117, 232.
 Wayne's, 200.
 Western Palm, 198, 364.
 Wilson's, 223.
 Yellow Palm, 232.
 Yellow-throated, 370.
- Washington, birds of, 138.
- Water-Turkey, 61, 250.
- Watson, C. Huber, early nesting of the Great Horned Owl, 220.
- Waxwing, Bohemian, 121, 227.
 Cedar, 114, 121.
- Weaverbird, Yellow-mantled, 450.
- Weiser, Charles S., flying with a flock of swans, 92.
- Wellman, Gordon Boit, the courtship flight of the Red-breasted Nuthatch, 112.
- West Virginia, birds of, 94, 121, 361, 443.
- Weston, Francis M., Gull-billed Tern nesting at Pensacola, 215.
- Wetmore, Alexander, status of the genus *Geranoaetus*, 212; a second specimen of the fossil bird *Bathornis veredus*, 213; the Western Pigeon Hawk in Florida, 356; recent records for Oklahoma and Texas, 373; records from the Dominican Republic, 450; extralimital record for Baird's Sandpiper, 433; notice of his 'The Generic Name *Haplornis*,' 143; notice of his 'Memoir of Robert Ridgway,' 381; review of his 'The Eagle, King of Birds, and his Kin,' 457; review of Swann's 'A Monograph of the Birds of Prey' edited by, 378.
- Weydemeyer, Winton, occurrence and nesting of the Redhead in Montana, 210; nesting of the Rough-winged Swallow, in Montana, 362; the Hoary Redpoll in Montana, 365.
- Weygandt, Cornelius, review of his 'A Passing America,' 128.
- Whip-poor-will, 436.
- White, F. B., birds and motor cars, 236.
- Widgeon, European, 354.
- Wieggers, Claude R., Hudson, G. E. and Morrison, J. L., first record of Starling for Nebraska, 221.
- Willet, 358.
 Western, 102.

- Williams, Laidlaw, concerning the nesting of certain birds at Princeton, N. J., 229.
- 'Wilson Bulletin,' reviewed, 144, 251, 382, 460.
- Wilsonia pusilla pusilla, 223.
- Wisconsin, birds of, 206.
- Wood, Harold B., Black Terns at Harrisburg, Pa., 359; flight speed of some birds, 452.
- Wood, H. B. and Merrill, a Pennsylvania Black-crowned Night Heron Colony, 93.
- Woodcock, 170, 236, 452.
- Woodpecker, Arctic Three-toed, 228, 372.
- Guatemala Hairy, 437.
- Ivory-billed, 248.
- Northern Pileated, 199, 228.
- Red-headed, 367, 445, 452.
- Southern Downy, 199.
- Southern Hairy, 199.
- Truxillo, 437.
- White-billed Pileated, 437.
- Wren, Carolina, 228, 445.
- Long-billed Marsh, 112, 452.
- Prairie Marsh, 197, 235.
- Short-billed Marsh, 235, 372.
- Western House, 197.
- Wright, George M., Dixon, Joseph S., and Thompson, Ben H., review of their, 'A Preliminary Survey of Faunal Relations in National Parks,' 377.
- Wynne-Edwards, V. C., Brunnich's Murre feeding in fresh water, 360.
- XANTHOCEPHALUS xanthocephalus, 198, 370, 446.
- Xanthomyias virescens virescens, 324.
- Xenops minutus minutus, 323.
- rutilus septentrionalis, 300.
- YELLOW-LEGS, Greater, 215, 231.
- Lesser, 215, 359.
- Yellow-throat, Florida, 200.
- Maryland, 232.
- Northern, 120, 200, 235, 249.
- Youngworth, William, field notes from Sioux City, Iowa, 124.
- Yungipicus scintilliceps kurodai, 146.
- s. nagamichii, 146.
- ZENAIDURA macroura carolinensis, 218, 284-296.
- m. marginella, 219.
- Zimmer, J. T., notice of his 'Studies of Peruvian Birds,' and 'Central American Forms of the Muscivorous Wren,' 250; of his 'The Formicarian Genus Thamnophilus,' 460.
- Zonotrichia albicollis, 448.
- leucophrys gambeli, 443.
- querula, 226.

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13	1895, Nov. 11-14	5th Washington	19	667
14	1896, Nov. 9-12	3d Cambridge	14	673
15	1897, Nov. 8-11	7th New York	18	679
16	1898, Nov. 14-17	6th Washington	21	695
17	1899, Nov. 13-16	1st Philadelphia	16	744
18	1900, Nov. 12-15	4th Cambridge	19	748
19	1901, Nov. 11-14	8th New York	18	738
20	1902, Nov. 17-20	7th Washington	25	753
20a	1903, May 15-16	1st San Francisco	7	—
21	1903, Nov. 16-19	2d Philadelphia	19	775
22	1904, Nov. 28-Dec. 1	5th Cambridge	17	808
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24	1906, Nov. 12-15	8th Washington	24	750
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26	1908, Nov. 16-19	6th Cambridge	17	888
27	1909, Dec. 6-9	10th New York	19	866
28	1910, Nov. 14-17	9th Washington	23	897
29	1911, Nov. 13-16	4th Philadelphia	18	887
30	1912, Nov. 11-14	7th Cambridge	18	929
31	1913, Nov. 10-13	11th New York	28	992
32	1914, Apr. 6-9	10th Washington	27	1101
33	1915, May 17-20	2d San Francisco	11	1156
34	1916, Nov. 13-16	5th Philadelphia	26	830
35	1917, Nov. 12-15	8th Cambridge	21	891
36	1918, Nov. 11	12th New York	14	953
37	1919, Nov. 10-13	13th New York	28	1024
38	1920, Nov. 8-11	11th Washington	25	1142
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40	1922, Oct. 23-26	1st Chicago	24	1457
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43	1925, Nov. 9-12	14th New York	30	1705
44	1926, Oct. 11-14	1st Ottawa	22	1815
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